

No. 35199-8

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**COURT OF APPEALS OF THE STATE OF WASHINGTON**  
**DIVISION III**

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CROWN RESOURCES CORPORATION,

Appellant,

v.

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY,

Respondent,

and

OKANOGAN HIGHLANDS ALLIANCE,

Intervenor-Respondent.

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**APPELLANT'S OPENING BRIEF**

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## **I. INTRODUCTION**

Crown Resources Corporation (“Crown”) operates the Buckhorn Mine (“Mine”), which is located in north-central Washington. The Washington Department of Ecology (“Ecology”) first issued National Pollutant Discharge Elimination System and Waste Discharge (“NPDES”) Permit No. WA0052434 to Crown on November 1, 2007 (“2007 Permit”) to regulate discharges of water from Crown’s Buckhorn Mine. Ecology renewed the 2007 Permit on February 27, 2014 (the “2014 Permit”), and modified that renewed Permit on April 1, 2015 (“Modified 2014 Permit”).

The Modified 2014 Permit substantially changed the requirements that Crown must comply with at the existing Mine, and established new conditions that the Mine cannot meet. In particular, the Modified 2014 Permit contains (i) new final water quality limits, (ii) a compliance schedule with new interim limits, and (iii) a newly defined “capture zone” area. Ecology included those new conditions without undertaking the legally required evaluation of what can be practicably achieved, or properly considering the actual hydrologic conditions at the Mine area. This case is about whether Ecology can require the operator of an existing mine to meet new, infeasible and unachievable conditions in order to continue previously approved activities.

More specifically, the Modified 2014 Permit contains new final surface and ground water compliance limits that are required to be met at various locations around the Mine. Instead of evaluating what levels can be reasonably or practicably achieved at the Mine given background conditions and previously-approved Mine operations as required by applicable regulations and guidance, Ecology based those final limits on an incorrect statistical calculation of background water quality. This resulted in final limits more stringent than the water quality that existed at several locations even before the Mine began operations.

The Modified 2014 Permit also contains new interim ground and surface water limits, and a 10-month compliance schedule during which the interim limits were in effect. Ecology included the interim limits and compliance schedule in the Permit pursuant to a 2013 settlement agreement with Crown purportedly to allow Crown sufficient time to undertake certain work at the Mine designed to improve water quality before the final limits became effective. However, the interim limits were frequently more stringent than existing water quality in the Mine area, and neither the interim limits nor compliance schedule were based on an evaluation of what could practicably be achieved given agreed upon water management measures.

Lastly, the Modified 2014 Permit includes, for the first time, a requirement that Crown capture all mine-impacted water, including groundwater, surface water, and shallow subsurface water, within a narrowly defined line on a map, which is described as the “capture zone.” Ecology drew the capture zone boundary based on prior modeling done to evaluate the groundwater zone that would be influenced by deep bedrock groundwater pumping wells at the Mine, and never evaluated whether it was feasible to also capture all surface and shallow subsurface water within this same zone.

Crown is challenging those new conditions as being contrary to law, unsupported by substantial evidence, and arbitrary and capricious. Crown is also appealing the Ferry County Superior Court’s holding as to when the Modified 2014 Permit went into effect.

## **II. ASSIGNMENTS OF ERROR**

1. The Ferry County Superior Court erred in its Final Order and Judgment of March 13, 2017 (the “Ferry County Final Order”) by affirming the Pollution Control Hearing Board’s (“PCHB”) July 30, 2015 Findings of Fact, Conclusions of Law and Order (“PCHB Order”), relating to the final limits, the interim limits and compliance schedule, and the capture zone conditions in the Modified 2014 Permit.

2. The Ferry County Superior Court further erred in its Final Order by affirming the PCHB Order, Conclusion of Law No. 6, regarding the effective date of the Modified 2014 Permit.

### **III. ISSUES PERTAINING TO ASSIGNMENTS OF ERRORS**

1. Are the final limits in the Modified 2014 Permit contrary to law, unsupported by substantial evidence, or arbitrary and capricious? (Assignment of Error No. 1).

2. Are the compliance schedule in the Modified 2014 Permit and interim limits contrary to law, unsupported by substantial evidence, or arbitrary and capricious? (Assignment of Error No. 1).

3. Is the capture zone boundary in the Modified 2014 Permit unsupported by substantial evidence, or arbitrary and capricious? (Assignment of Error No. 1).

4. The Washington Administrative Procedure Act (“APA”), RCW 34.05.422(3) provides that, where an existing permit is renewed to include new limitations, the original permit will remain in effect until the agency has made a final determination of the renewed permit and the time for seeking review of the final agency decision has expired. The PCHB did not finally determine the validity of the Modified 2014 Permit until July 30, 2015, and the deadline for Crown to appeal the PCHB Order was

August 29, 2015. Did the 2007 Permit remain in effect until August 29, 2015? (Assignment of Error No. 2)

#### **IV. STATEMENT OF THE CASE**

##### **A. Background Facts**

###### **1. The Buckhorn Mine and Mine Operations**

The Buckhorn Mine is a 46-acre underground gold mine located in north-central Washington. *See* Fact Sheet for NPDES Permit No. WA0052434, Mar. 1, 2014 (“2014 Fact Sheet”), AR 000001622-1623. The Mine began operating in 2008. *Id.* at AR 000001625. The Mine has been an important part of the economy for the surrounding communities; the Mine and its associated operations have employed as many as 230 people at any given time. *See* Testimony of Mark Ioli (“Ioli Testimony”), RP 69:7-10.

As part of Crown’s permitted operations, water is removed from within and around the Mine workings using sumps and groundwater dewatering wells. Crown treats this removed water at its onsite Mine Water Treatment Plant (“MWTP”). 2014 Fact Sheet, AR 000001611-1612, 000001628. Industrial area stormwater is collected by a surface drainage system and by several stormwater seepage collection trenches and is eventually directed to the MWTP. *Id.* The MWTP uses a state-of-the-art reverse osmosis treatment technology to treat the collected water

before it is discharged to surface and ground waters at permitted outfall locations. *Id.* at AR 000001654; *see also* testimony of David Banton (“Banton Testimony”), RP 531:19-25. The Mine’s overall water management system ensures protection of groundwater and surface water quality downgradient of the Mine. Banton Testimony, RP 472:13-478:11, 489:9-492:7.

## **2. The Permit Renewal and Settlement Agreement**

Ecology issued the 2007 Permit to Crown effective November 1, 2007, to regulate discharges of water from the Mine. *See* 2007 Permit, AR 000002020-2064, appended hereto as **Attachment 1**. The 2007 Permit regulated the Mine’s discharges using a compliance structure fundamentally different from that of the Modified 2014 Permit at issue in this appeal. Both the 2007 Permit and the Modified 2014 Permit regulated discharges from the MWTP by requiring that numeric effluent limits be met at end-of-pipe discharges from the MWTP. 2007 Permit Fact Sheet, AR 000002066; Testimony of Sanjay Barik (“Barik Testimony”), RP 1197:1-25. The 2007 Permit also contained a narrative description of a groundwater capture zone, which was managed by monitoring groundwater elevation data around the Mine site. *See* 2007 Permit, AR 000002032; Testimony of Gina Myers (“Myers Testimony”), RP 184:14-185:15, 186:6-187:17. Unlike the Modified 2014 Permit discussed below,

the 2007 Permit did not include a capture zone boundary line or numeric limits on surface and ground water quality outside the capture zone area at set compliance points. *See* 2007 Permit, AR 000002031-2037; *see also* Myers Testimony, RP 418:16-419:3.

On October 31, 2012, the 2007 Permit expired by its own terms. Crown timely filed an application for renewal of the 2007 Permit, and Ecology administratively extended that Permit until the renewed permit became effective. On February 27, 2014, Ecology renewed the 2007 Permit. *See* 2014 Permit (as originally issued), AR 000001496-1609.

In June 2013, Crown and Ecology entered into a Settlement Agreement and Consent Order (“Settlement Agreement”), which resolved a Notice of Penalty Ecology had issued for alleged violations of the 2007 Permit. Settlement Agreement, AR 000001418-1430, appended hereto as **Attachment 2**. The Settlement Agreement released Crown from liability under the Notice of Penalty and Crown agreed, among other things, to undertake significant investigation and water management measures during 2013 and 2014 (referred to in the Settlement Agreement as the “Water Quality Protection Program”), including implementation of source control measures aimed at improving the Mine’s existing water quality management systems. Settlement Agreement, AR 000001423-1428. Ecology and Crown also agreed that the renewed permit Ecology was then



preparing would include interim water quality limits and a compliance schedule as a bridge to meeting new final limits following implementation of the Water Quality Protection Program. *Id.* at AR 000001427 (“The parties agree that the water quality protection activities and management responses identified above, if fully and adequately implemented, justify Ecology in placing a compliance schedule and interim effluent limits in the new permit”); *see also* Ioli Testimony, RP 82:10-15, Myers Testimony, RP 221:14-223:10.

### **3. The Terms of the 2014 Permit**

#### *a. Interim Limits, Interim Compliance Schedule and Final Limits*

The 2014 Permit set forth new requirements for the Mine, including establishing compliance points and setting both interim and final numeric water quality limits that Crown must meet in the environment (in addition to the limits on discharges from the MWTP as required in the 2007 Permit) for certain constituents in both surface and groundwater. *See* Modified 2014 Permit, AR 000001120-1122, appended hereto as **Attachment 3**; Barik Testimony, RP 1197:1-25. For the first 10 months after issuance of the 2014 Permit, Crown was to comply with a set of interim water quality limits; thereafter, more stringent, final limits became effective. *See* Modified 2014 Permit, AR 000001120. Ecology generally set the interim limits using the end-of-pipe discharge limits on the MWTP

contained in the prior 2007 Permit without considering the existing water quality at the new compliance locations. Myers Testimony, RP 220:23-221:13. Ecology did not conduct a technical evaluation of whether the 10-month compliance schedule provided a reasonable time for the approved Water Quality Protection Program to improve water quality at the new compliance points.

With a few exceptions, the final water quality limits that Ecology included in the Modified 2014 Permit were set at statistical “background” water quality numbers developed by Pacific Groundwater Group (“PGG”), a consultant retained by Intervenor Okanogan Highlands Alliance (“OHA”). Those “background” numbers are, in many locations, lower than the maximum pre-mining water quality. *See* Modified 2014 Permit, AR 000001121-1122; Testimony of Owen Reese (“Reese Testimony”), RP 842:10-843:17. In setting these final enforcement limits, Ecology did not evaluate whether these calculated values were reasonably or practicably achievable.

*b. Capture Zone*

The Modified 2014 Permit included for the first time a capture zone boundary line within which Crown is required to capture all surface and ground water affected by the Mine. Modified 2014 Permit, AR 000001115; Banton Testimony, RP 567:4-570:17, 722:6-14. Ecology

derived this boundary based on groundwater modeling completed as part of Ecology's 2006 Final Supplemental Environmental Impact Statement ("FSEIS") for the Mine<sup>1</sup> and subsequent modeling done by Crown's consultant, Golder Associates, which evaluated the area within which the Mine dewatering system would collect bedrock groundwater. None of that modeling was designed to model the behavior of shallow subsurface and surface water runoff, which is not influenced by the Mine dewatering system. Banton Testimony, RP 571:2-19, 754:2-757:10; Barik Testimony, RP 934:14-935:6; Myers Testimony, RP 294:14-295:15. Moreover, a portion of the approved Mine workings and stormwater collection facilities are located outside of this newly defined boundary. Ioli Testimony, RP 1312:7-1313:4.

#### **B. Procedural History of Permit Appeal**

On February 28, 2014, Crown timely appealed the 2014 Permit to the PCHB, alleging that key provisions of the 2014 Permit were unreasonable, arbitrary and capricious, and failed to comport with applicable law, Ecology guidance, and the terms of the Settlement Agreement. OHA intervened as an Intervenor-Respondent.

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<sup>1</sup> The FSEIS is a detailed environmental impact analysis completed in 2006 during the original Mine permitting by a consultant on behalf of Ecology, with input from Golder on behalf of Crown. Myers Testimony, RP 45:1-9.

Beginning on January 26, 2015, the PCHB conducted a seven-day hearing.<sup>2</sup> Crown presented three expert witnesses and two fact witnesses. Ecology presented only one witness, Sanjay Barik.<sup>3</sup> Mr. Barik was an Ecology employee who took over responsibility for preparing the renewed permit in 2013. He had little prior experience with the Buckhorn Mine, and had no formal training or education in hydrogeology and modeling – both areas of expertise relevant to the issues in this matter.<sup>4</sup> Barik Testimony, RP 906:25-908:2.

On April 1, 2015, while the PCHB appeal was pending, Ecology issued the Modified 2014 Permit, which corrected some of the errors in the 2014 Permit that Crown had identified in its appeal.<sup>5</sup> Modified 2014 Permit, AR 000001108-1305. But the Modified 2014 Permit did not address most of the defects in the 2014 Permit.<sup>6</sup>

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<sup>2</sup> On December 30, 2014, the PCHB *sua sponte* dismissed for lack of jurisdiction Crown's claim that the 2014 Permit's interim limits and the compliance schedule for meeting the final limits violate the Settlement Agreement. On January 15, 2015, Crown filed with the Ferry County Superior Court a Complaint and Petition for Review, Case No. 15-2-00003-2, challenging those provisions of the 2014 Permit that violate the Settlement Agreement. That case is still pending before the Superior Court.

<sup>3</sup> Intervenor-OHA also presented expert testimony of Stephen Swope of PGG.

<sup>4</sup> Mr. Barik has a master's degree in business administration and started working at Ecology as a financial assistance specialist, and has "some course work" in numerical modeling. Barik Testimony, RP 907, 1084-1086.

<sup>5</sup> Ecology also modified the Permit a year earlier on April 29, 2014.

<sup>6</sup> On April 3, 2015, Crown sent to the PCHB a letter explaining that the Modified 2014 Permit did not resolve most of the issues on appeal before the PCHB. Crown's April 3, 2015 letter, AR 000001355-1360; Memorandum from Aspect explaining the permit modifications, AR 000001438-1441. The PCHB accepted the Modified 2014 Permit and Crown's April 3 letter into the record.

On July 30, 2015, the PCHB issued its Order affirming the Modified 2014 Permit. PCHB Order, CP 2.1, AR 000001442-1487. Despite the complex nature of the case, the PCHB made its ruling months after the PCHB hearing took place without reviewing a written transcript of the extensive, seven-day hearing or even mentioning much of the testimony presented by Crown.

Crown filed a Petition for Review with the Ferry County Superior Court, seeking judicial review of the PCHB Order and Ecology's issuance of the Modified 2014 Permit. Petition for Review, CP 2-2.8. After briefing on the matter by the parties, CP 14, 18, 20, 21, at 00000801-1500, the Superior Court held a hearing, during which it issued an oral ruling from the bench denying Crown's Petition for Review and affirming the PCHB Order. CP 23 (second attachment, transcript of Superior Court's oral ruling). The Superior Court entered a Final Order and Judgment, CP 23 (first attachment), and Crown timely filed a Notice of Appeal, CP 23.

## **V. ARGUMENT**

### **A. Scope and Standard of Review**

Judicial appeals of final agency decisions resulting from adjudicatory proceedings, such as the PCHB Order, are governed by the APA. *See* RCW 43.21B.180. RCW 34.05.570(3) establishes nine grounds for granting relief from the PCHB Order, three of which are

relevant to this appeal. A court shall overturn the PCHB Order where:

(i) the agency has erroneously interpreted or applied the law; (ii) the order is not supported by substantial evidence; or (iii) the order is arbitrary or capricious. RCW 34.05.570(3)(d), (e) & (i); *Motley-Motley, Inc. v. State*, 127 Wash. App. 62, 71-72; 110 P.3d 812, 817 (2005); *Bowers v. Pollution Control Hearings Bd.*, 103 Wash. App. 587, 595; 13 P.3d 1076, 1082 (2000). Crown bears the burden of demonstrating the invalidity of the PCHB Order. RCW 34.05.570(1)(a).

The PCHB's legal conclusions are reviewed de novo. *Motley-Motley, Inc.*, 127 Wash. App. at 72; 110 P.3d at 818; *Bowers*, 103 Wash. App. at 596; 13 P.3d at 1082. Similarly, a court applies de novo review to questions concerning the application of law to facts, and the reviewing court will "determine the correct law independent of the agency's decision and then apply the law to established facts de novo." *Port of Seattle v. Pollution Control Hearings Bd.*, 151 Wash.2d 568, 588; 90 P.3d 659, 670 (2004). Where there is a mixed question of law and fact involving the process of comparing or bringing together the correct law and the correct facts to determine the legal consequences that follow, a court will review that question de novo. *Johnson v. Emp't Sec. Dep't of State of Wash.*, 112 Wash.2d 172, 175; 769 P.2d 305, 306 (1989); *Franklin Cnty. Sheriff's Office v. Sellers*, 97 Wash.2d 317, 321-22; 646 P.2d 113, 119 (1982).

The PCHB’s factual findings are reviewed to determine whether they are supported by substantial evidence or are arbitrary and capricious. *See, e.g., May v. Robertson*, 53 Wash. App. 57, 73, 218 P.3d 211, 219 (2010). When determining if an agency action is arbitrary and capricious, the court considers whether it was a “willful and unreasonable action in disregard of facts and circumstances.” *Id.* To be supported by substantial evidence, the agency action must be based on evidence that “would convince an unprejudiced, thinking mind of the truth of the declared premise.” *Id.*

The court of appeals applies these standards of review directly to the administrative record that was before the PCHB. *Motley-Motley, Inc.*, 127 Wash. App. at 72-73; 110 P.3d at 817-818; RCW 34.05.558. The findings of the Superior Court are “superfluous” for purposes of this appeal since the Superior Court did not take any new evidence beyond the PCHB administrative record. *Motley-Motley, Inc.*, 127 Wash. App. at 72-73; 110 P.3d at 818. Consequently, this appeal focuses on the record established in the PCHB proceeding.

**B. The Final Limits Are Contrary to Law, not Supported by Substantial Evidence, and are Arbitrary and Capricious**

**1. Ecology's Regulations and Formal Guidance Set Forth a Clear Procedure for How Ecology Should Establish Permit Enforcement Limits**

Ecology regulations and formal guidance establish requirements the agency must follow when setting water quality permit limits. WAC 173-200-050, appended hereto as **Attachment 4**, lists the factors that Ecology is to consider when setting groundwater quality enforcement limits in a waste discharge permit, such as the Modified 2014 Permit. Enforcement limits should be defined on a case-by-case basis that takes into account the site-specific facts of the permitted activity and the legal requirements set forth in the regulation. WAC 173-200-050(2).

Permit enforcement limits should generally be set to ensure compliance with applicable State water quality criteria, which have been established to protect human health and beneficial uses. WAC 173-200-050(3)(a)(iii), (v). However, if background water quality already exceeds those criteria, the limit will be set at the higher background level. WAC 173-200-050(3)(b)(ii). Ecology must also consider the State's antidegradation policy and set limits "as near the natural groundwater quality *as practical*." WAC 173-200-050(3)(a)(i), (ii) (emphasis added). In determining what limits are practical to achieve, Ecology must undertake an "AKART" analysis, which considers and sets the



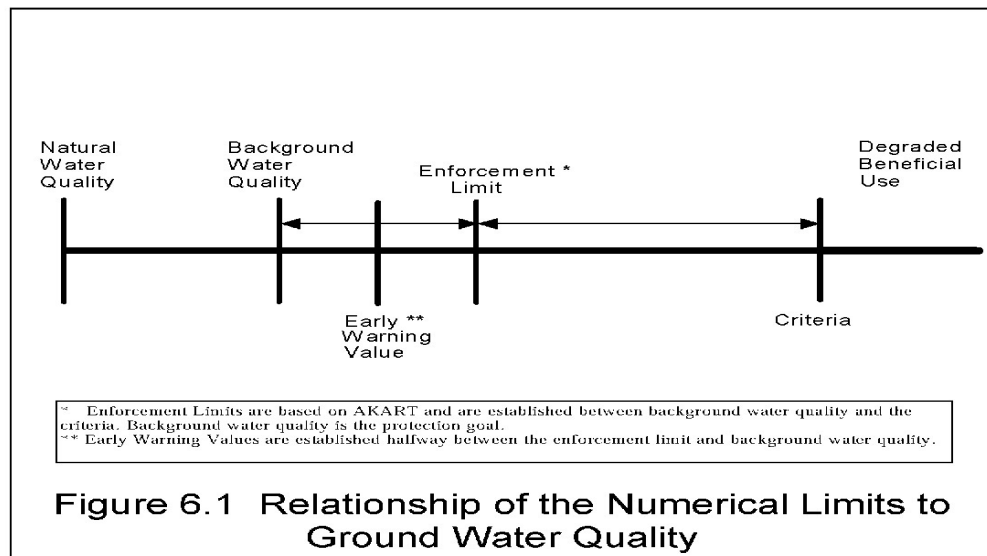
enforcement limits based on an evaluation of “all known, available, and reasonable methods of prevention, control, and treatment.” WAC 173-200-050(3). The regulations governing permits for discharges to surface waters also require Ecology to consider AKART when establishing permit enforcement limits, and define “AKART” as representing “the most current methodology that can be *reasonably required* for preventing, controlling or abating the pollutants associated with a discharge.” WAC 173-220-130(1)(a); 173-201A-020 (emphasis added), appended hereto as **Attachments 5 and 6**.

Ecology’s longstanding guidance implementing these regulations similarly directs that when existing water quality is better than the State criteria, as is the case for many constituents at the Mine, permit limits be set at levels that meet those criteria and are protective of existing water quality “to the extent practical,” based on an evaluation of AKART. *See* Ecology, Implementation Guidance for the Ground Water Quality Standards (Oct. 2005), AR 000002747 (“Implementation Guidance”), excerpts of which are appended hereto as **Attachment 7**.<sup>7</sup>

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<sup>7</sup> The Implementation Guidance expressly applies to Ecology’s issuance of State Waste Discharge Permits, such as the Modified 2014 Permit, and Ecology’s witness Mr. Barik acknowledged that Ecology is obligated to follow this Guidance when setting permit limits. Implementation Guidance, AR 000002745 (stating that the Guidance “will be used” to implement Chapter 173-200 WAC for activities required to receive a State waste discharge permit); Barik Testimony, RP 950:1-951:25.

The Implementation Guidance further details the two-step process Ecology is to follow when establishing limits where the existing water quality is better than State criteria. Ecology must first properly determine existing background water quality, and then establish the limit at a level between background and the State criteria based on an evaluation of what water quality can be practically and reasonably achieved. *Id.* at AR 000002793. Figure 6.1 from the Implementation Guidance, AR 000002793, which is copied below, illustrates this process for establishing permit enforcement limits.



The first step in setting enforcement limits is to determine background water quality conditions in the area that will be impacted by the permitted discharge. Implementation Guidance, AR 000002811. This is done through a series of steps described in the Implementation

Guidance for evaluating available background water quality data and selecting the appropriate background water quality level, known as the “upper tolerance level,” for the water quality parameters to be regulated by the permit. *Id.* at AR 000002804 and AR000002796 (Figure 6.3); *see also* Reese Testimony, RP 787:22-788:25. In cases such as this, where the data is both non-parametric (*i.e.* does not follow a normal bell curve) and robust, Ecology’s implementation guidance directs that the upper tolerance level be set at the highest background water quality number in the available dataset. *See* Implementation Guidance, AR 000002844; *see also* Sterrett Testimony, RP 1031:4-1034:17 (testifying that the appropriate approach in this case, given the robust nature of the data, would be to establish background at the highest number in the dataset to reduce the likelihood of false positive violations).

As the second step in the process, Ecology is to set the actual permit limits at a level between background and the applicable State criteria, based on an evaluation of AKART to determine what water quality can be practically achieved consistent with the goal “to minimize the impact to background water quality by promoting the most effective

and *reasonable* treatment and reduction of wastewater discharges.” *Id.* at AR 000002793, 000002795 (emphasis added).<sup>8</sup>

**2. Ecology Failed to Follow its Regulations and Guidance when Setting the Final Limits, and those Limits Are Not Supported by Substantial Evidence**

The PCHB administrative record documents that Ecology did not follow either its regulations or permitting guidance when setting the final limits in the Modified 2014 Permit. As the Ecology employee who prepared the permit explained, the final limits were based solely on a statistical calculation of background levels provided by OHA’s consultant. Barik Testimony, RP 955-957. That approach deviated from both the regulations and Ecology’s guidance by (a) using inappropriate background values, and (b) ignoring the second step of the permit limit-setting process by failing to conduct an AKART analysis evaluating what water quality levels could be practicably or reasonably achieved. Reese Testimony, RP 853:17-20. Because of Ecology’s failure to undertake those required evaluations, the final limits are not only contrary to law, but, in many instances, are simply unachievable.

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<sup>8</sup> Following the steps outlined in Figure 6.4 of the Implementation Guidance, Ecology derives a range of possible limits, with the upper enforcement limit set at the criterion level (Box A, page 77) and the lowest possible enforcement limit set at background (Box B, page 77). Implementation Guidance, AR 000002811-2816. The Guidance further instructs Ecology to select a value within this range based on the technology “that is *reasonable* and best protects background water quality.” *Id.* (emphasis added).

*a. Ecology's Failure to Consider What Limits Are Reasonable, Practicable and Consistent with AKART*

It is undisputed that, in setting the final limits, Ecology did not conduct any AKART analysis or other evaluation of whether these new limits were practical or could otherwise be reasonably achieved given the site-specific conditions at the Mine. Ecology's sole witness, Mr. Barik, specifically acknowledged that Ecology did not conduct an AKART analysis when establishing the final limits, and Crown's expert witnesses further documented that omission. Barik Testimony, RP 936-937; Reese Testimony, RP 825:14-23. In other words, Ecology ignored its own guidance and regulations and bypassed the critical second step in establishing permit limits. Even OHA's consultant who prepared the background calculations that Ecology used for the final limits acknowledged that those calculations were prepared solely to provide information on background values, and not to establish permit compliance limits. Swope Testimony, RP 1269:12-1270:11 (testifying that he had never worked on compliance limits for a NPDES Permit and that he calculated background levels and not compliance limits).

Crown's experts confirmed that, consistent with the regulations and Implementation Guidance, a permit enforcement limit should be set somewhere between background water quality and the applicable water

quality criteria, with the specific value based on an evaluation of AKART and the reasonable and practical technologies available for protecting the background water quality. Reese Testimony, RP 854:1-20. Mr. Reese testified that he had never seen permit limits set at levels based on a statistical background calculation. Reese Testimony, RP 854:7-8.<sup>9</sup>

Ecology's use of inappropriate background levels and its failure to evaluate what enforcement limits could be practicably achieved while still being protective of State water quality criteria is particularly egregious here, since Ecology applied the new final limits to an existing, approved mine that had been operating for several years. As a result of natural conditions and permitted mine activities—including use of construction fill, discharges from the MWTP that were previously authorized at higher concentrations than the final limits, and authorized use of chemicals for dust control—water quality concentrations for several constituents at locations around the Mine are higher than the statistical background levels calculated by OHA's consultant. *See infra* Section V.C. (providing a detailed discussion of background water quality and the effects of previously authorized activities).

One example is chloride. Using PGG's statistical calculation of pre-mining background, Ecology set the new final limit for chloride at

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<sup>9</sup> Mr. Reese is a Water Resources Engineer at Aspect Consulting with over 16 years of water quality permitting experience. Reese Testimony, RP 391:15-392:5.

2mg/l. Modified 2014 Permit, AR 000001121. However, the 2007 Permit previously authorized Crown to discharge chloride from the MWTP at a limit of 250 mg/l, more than 100 times the new final limit, and those previously authorized discharges affected existing water quality at many locations. 2007 Permit, AR000002026; Banton Testimony, RP 553:12-22. Yet, Ecology did not conduct any evaluation of whether the extremely low, new final limit was practicably achievable given the years of prior authorized discharges from the MWTP into area surface and ground water.

If Ecology had conducted the required analyses, it would have been apparent that many of the final limits, such as chloride, are not reasonably or practicably achievable as documented by Crown's experts, given the existing conditions. Banton Testimony, RP 537:18-21, 554:1-5, 556:1-12. Ecology's complete failure to evaluate what final limits would be practicably and reasonably achievable given background conditions and previously permitted activities violates Ecology's regulations and Guidance and resulted in unachievable final limits that are contrary to law, not supported by substantial evidence, and are arbitrary and capricious. See RCW 90.48.520 ("the department of ecology *shall* in issuing and renewing state and federal wastewater discharge permits review the applicant's operations and incorporate permit conditions which require all known, available, and reasonable methods to control toxicants in the

applicant's wastewater.”). *Cf., Spokane County v. Sierra Club*, 195 Wash. App. 1042, 10 (Wash. App. 2016) (unpublished) (holding that Ecology erred in issuing a discharge permit without conducting a “reasonable potential” analysis as required by 40 C.F.R. § 122.44(d)(1), even though PCHB conducted such analysis on appeal).

*b. Flaws in Ecology's Determination of Background*

As discussed in detail by Mr. Reese, OHA's consultant (PGG) calculated background water quality levels at what is known as the “95<sup>th</sup> percentile upper tolerance level,” by selecting a value for each constituent regulated under the Modified 2014 Permit that statistically would be greater than or equal to 95% of sampling results over time. Reese Testimony, RP 838:17-839:4, 840:9-23; 842:10-843:17. This means that in the range of background water quality data (in some cases consisting of hundreds or thousands of data points), PGG selected as background a value for each constituent that will be exceeded, on average, by 5% of past and future samples, regardless of mining activities. Reese Testimony, RP 856:16-24. In other words, Crown will exceed the final limits (and be subject to fines and penalties) approximately 5% of the time simply because Ecology set enforcement limits at background values that will be exceeded, statistically, by 5% of samples – regardless of any human impact.



The statistical evaluation conducted by PGG is contrary to Ecology's Guidance for calculating background. It is undisputed that the historic water quality data set used to determine background does not follow a normal "bell curve" and is non-parametric since the data was collected from several locations over different time periods. *See, e.g.,* Swope Testimony, RP 1270:12-14; Reese Testimony, RP 798:12-19; 799:13-16; 833:4-17. As required by the Implementation Guidance, when the data is nonparametric, background levels should be based on the highest value in the historic data set, rather than on a 95% upper tolerance statistical calculation. *See* Implementation Guidance, AR 000002804 (Figure 6.3, last box in the flow chart referencing "Determine type of distribution") and AR 000002844 (for nonparametric data, use the maximum value as the upper tolerance, and the derived upper tolerance limit defines background water quality); Reese Testimony, RP 800:11-21; 804:10-14; 842:17-843:17.

These various and compounded missteps by Ecology resulted in wholly unworkable final limits that yield hundreds of permit exceedances every year—even if the Mine were to discharge nothing at all—and cannot be achieved through use of reasonable and practicable technologies. Reese Testimony, RP 856:16-858:21 (describing that since statistically 5% of samples will exceed the 95% tolerance limit – even in the absence of

the mine operations, and given the number of required sampling locations and parameters, and given that the enforcement limit is set at this truncated background level, the Mine would expect several hundred violations annually); Swope Testimony, RP 1284:1-8; *see also* Myers Testimony, RP 236:4-12 (describing that the new final limits would have resulted in 40-50 exceedances per month based on 2014 data). Therefore, the Modified 2014 Permit's final limits are contrary to law, unsupported by substantial evidence in the record, and arbitrary and capricious. *See* RCW 34.05.570(3)(d), (e), (i).

### **3. The PCHB Did Not Provide Valid Grounds for Upholding the Final Limits**

The PCHB did not properly apply Ecology's regulations and Guidance, which prescribe the required steps for establishing water quality permit limits. In its Order, the PCHB ignored the applicable regulations and Implementation Guidance requiring Ecology to undertake an AKART analysis to evaluate what limits can be practically and reasonably achieved. PCHB Order, CP 2.1, AR 000001466-1473. The PCHB further failed to address Crown's evidence that the final limits are not practicably achievable and essentially guarantee that Crown will regularly exceed those limits. *Id.* (failing to even mention testimony in the record at RP 1035:9-24 on this point).

Moreover, the PCHB recognized that the Implementation Guidance “suggests that the highest value in a non-parametric data set is used to establish background levels,” but went on to accept Ecology’s explanation that using PGG’s statistical calculation instead balances the risk of false positives with the risk of false negatives. PCHB Order, CP 2.1, AR 000001475-001476) (citing only the testimony of OHA’s expert in support of this position). However, contrary to Ecology’s approach of hard-wiring false exceedances into the Modified 2014 Permit, Ecology’s regulations and Guidance allow Ecology to use early warning values in a permit as a means for ensuring that potential impacts of permitted activities do not go undetected. *See* WAC 173-200-070; Implementation Guidance at AR 000002809-2810 (describing early warning values as the specified means of addressing this concern); and Figure 6.1, which is reproduced at *supra*, p. 17. That approach allows Ecology to monitor trends in water quality to determine if water quality impacts may be occurring, and take appropriate steps prior to any significant impact. Ecology’s decision to ignore that authority does not provide valid grounds for adopting permit limits that guarantee false exceedances, do not reflect actual water quality conditions and cannot be reasonably achieved.

Consequently, the PCHB’s Order should be reversed, and the Modified 2014 Permit should be remanded for Ecology to develop

appropriate final limits in accordance with the regulations and Implementation Guidance.

**C. The Interim Limits and Compliance Schedule Are Contrary to Law, Unsupported by Substantial Evidence, and Arbitrary and Capricious**

Because the 2014 Permit was the first permit for the Mine to include numeric limits for surface and groundwater quality outside the capture zone, Ecology included in the 2014 Permit (and the Modified 2014 Permit) a compliance schedule and interim limits to be met at the new compliance points upon issuance of the Permit. The purpose of the compliance schedule and interim limits was to provide a bridge to meeting the new final limits following Crown's implementation of the Water Quality Protection Program pursuant to the Settlement Agreement. Settlement Agreement, AR 000002176-2181; *see also* Myers Testimony, RP 221:14-25 (discussing purpose of including agreement for interim limits as part of Settlement Agreement). Ecology arbitrarily decided that the interim limits should be in effect for 10 months following issuance of the Permit, after which the final limits had to be met. *Supra*, pp. 8-9. The decision to adopt a 10-month interim period was made without any assessment of the feasibility of the Mine achieving the final limits in such a short time.

Ecology's regulations authorize the use of interim limits and compliance schedules in NPDES permits. The regulation in place at the time Ecology issued the 2014 Modified Permit provided that, in crafting schedules of compliance, Ecology should focus on "ensur[ing] final compliance with all water-quality based effluent limits in the *shortest practicable time*," which could be as much as 10 years. WAC 173-201A-510(4)(a), (c) (2014) (emphasis added), appended as **Attachment 8**.<sup>10</sup> Those regulations further provided that, during the compliance schedule period, interim limits (either numeric or nonnumeric) shall be established, based on the "best professional judgment" of Ecology. WAC 173-201A-510(4)(b) (2014). In exercising its best professional judgment to establish interim limits, Ecology must support its decision with substantial evidence, and must act in a manner that is not arbitrary and capricious given all facts before the agency. RCW 34.05.570(3)(e), (i).

Here, the PCHB record establishes that Ecology did not consider what time period would be practicable for meeting the new final limits when it established the 10-month compliance schedule, and that Ecology

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<sup>10</sup> In 2016, WAC 173-201A-510(4) was amended in part. The current version of that regulation does not limit compliance schedules to 10 years, and provides that they should generally not exceed the term of the permit (five years), but may be for a longer period if needed to come into compliance with applicable State criteria. WAC 173-201A-510(d). See WAC 173-201A-510 (2017), appended as **Attachment 9**. The compliance schedule is to require compliance with the applicable requirements as soon as possible based on consideration of site-specific measures that could be implemented, such as changes in facility operations or pollution prevention measures. *Id.*

did not consider actual site conditions when setting the interim limits. Consequently, the compliance schedule and interim limits are contrary to law, unsupported by substantial evidence, and are arbitrary and capricious.

**1. The Ten-Month Compliance Schedule Was Not Based on a Practicable Time-frame**

As discussed above in Section IV.A.2, Crown committed in the Settlement Agreement to implement a supplemental Water Quality Protection Program at the Mine, in part, to address historic water quality impacts from Ecology-permitted Mine activities. *See* Myers Testimony, RP 393:15-395:4. Under this Program, Crown agreed to complete significant remedial activities during 2013 and 2014, including implementation of water-related source control measures, installation of additional capture wells, construction of infrastructure designed to improve the capture and control of mine-impacted water, and completion of investigations aimed at improving upon Crown's existing water quality management techniques. *Banton Testimony*, RP 499:18-501:20; *Ioli Testimony*, RP 80:24-82:21; *Settlement Agreement*, AR 000001423-1428.

As expert testimony demonstrated at the hearing, these on-the-ground measures will take years, not months, to substantially improve existing water quality at certain down-gradient locations. *See, e.g.*, *Banton Testimony*, RP 551:10-556:12 (discussing time required for

chloride concentrations to reach permit limits); *see also* Sterrett Testimony, RP 1013:24-1016:5; AR 000008275 (graph showing chloride concentrations in MW-14). For example, at certain compliance locations, various constituent concentrations are elevated because of prior mine operations previously authorized by Ecology. These include (1) construction fill used for leveling the site for mine buildings or for providing structural support for mine features such as ponds, (2) previous MWTP discharges permitted by Ecology, and (3) chemicals applied to roads for dust suppression under a requirement of the United States Forest Service. *See* Banton Testimony, RP 511:13 (describing 2010 technical report that identified permitted MWTP discharges and required road dust control activities as potentially impacting water quality); 535:9-536:4, 574:5-14 (describing connection between planned phased removal of construction fill and integrity of existing stormwater collection ponds); 550:12-551:9 (describing impacts from magnesium chloride applied to the roads under a U.S. Forest Service requirement); Myers Testimony at 392:10-23 (discussing construction fill). The Modified 2014 Permit's 10-month compliance period did not allow sufficient time for the Water Quality Protection Program agreed to in the Settlement Agreement to address these conditions and achieve their intended effect.

With regard to the historic discharges that were permitted from the MWTP, Mr. Banton of Golder Associates, who has studied the Mine and its hydrology and hydrogeology for 24 years (Banton Testimony, RP 450-460), explained that it will take significantly longer than 10 months for the residual chloride and nitrate levels resulting from those discharges to diminish. For example, as noted above, the MWTP discharge limit for chloride under the 2007 Permit was 250 mg/l, while the final limit under the Modified 2014 Permit for the compliance points is 2 mg/l. Banton Testimony, RP 553:12-22. Thus, from 2008 until 2010, Crown discharged chloride in treated water to permitted Outfall 001, as allowed under the 2007 Permit, at over 100 times the final limit in the Modified 2014 Permit.<sup>11</sup> As a result, groundwater quality below this discharge point has elevated chloride concentrations.<sup>12</sup> Although these levels are declining, Crown expects it will take several additional years for chloride concentrations to reach the new final limits. Banton Testimony, RP 537:18-21, 554:1-5, 556:1-12; *see also* AR 000008287 (graph showing chloride concentrations downgradient of Outfall 001).

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<sup>11</sup> The chloride was a by-product of a prior treatment process used at the MWTP, which used a treatment technology evaluated and approved by Ecology. Banton Testimony, RP 493:15-494:3.

<sup>12</sup> In addition, the MWTP was historically permitted to discharge a higher level of nitrate, though still below drinking water standards, and as a result, remnant effects of these permitted nitrate discharges are present. Banton Testimony, RP 537:24-538:17.



Mr. Banton and Mr. Sterrett provided similar testimony about the impacts attributable to construction fill. Crown was authorized to use a rock fill material to level the Mine site in order to build surface facilities at the site. Myers Testimony, RP 391:15-392:5. Those materials have affected surface and shallow subsurface runoff at the site by contributing sulfates and sediments to the runoff water, although the water quality generally remains below State water quality criteria. Myers Testimony, RP 392:10-23. Crown has committed, per the Settlement Agreement, to study the impacts from the construction fill, remove fill as necessary, and otherwise install and operate a trenching system to capture and treat water moving through the fill. Settlement Agreement, AR 000001424-1425. Much of this work has already been done or is ongoing, but as the experts Mr. Banton and Mr. Sterrett testified, it was not possible for Crown to complete this work and meet certain final permit limits for sulfate and TSS within the 10-month compliance period. Banton Testimony, RP 672:4-674:10; Sterrett Testimony, RP 1016:13-15 (no technical analysis to support interim timeframe) and 1016:24-1017:19 (10-month period is not sufficient for sulfate concentrations to reach the final limit); *see also* AR 000008277 (graph of sulfate concentrations illustrating that final limits cannot be met in 10-month period).

Ecology's witness, Mr. Barik, testified that the 10-month compliance period was selected to allow for one additional spring runoff season to occur, which Mr. Barik believed would provide enough time for existing contaminants to flush through the system and allow Crown time to implement other planned adaptive management improvements to address known water quality issues. Barik Testimony, RP 1140:23-1141:21. However, he provided no scientific rationale or factual basis for his belief that one runoff season was sufficient, and Ecology provided no other evidence to support such a conclusion. *Id.* at RP 1136:21-1145:19 (Responding to a question regarding the rationale for selecting a 10-month interim period, Mr. Barik provides no technical reasoning for the time period). In contrast, the only expert testimony presented on this subject by Mr. Sterrett and Mr. Banton, which was based on their many collective years of experience studying these types of issues and evaluating data from the site, demonstrated that significantly more time was needed to implement the approved water quality protection measures, and allow for historically authorized impacts to dissipate. Banton Testimony, RP 556:1-12; Sterrett Testimony, RP 1013:7-1019:1.

Without addressing this undisputed evidence, the PCHB affirmed the 10-month compliance period in the Modified 2014 Permit, stating as its only justification that “[f]or several years, Crown has been aware of

existing contaminates [sic] related to its prior discharges from the MWTP, as well as elevated sulfate concentrations in MW-14.” PCHB Order, CP 2.1, AR 000001478. The PCHB provided no further explanation as to how this justifies such an abbreviated period for meeting the entirely new final limits that Ecology first included in the 2014 Permit and which OHA first proposed during comments on the draft 2014 Permit. The record demonstrates that Ecology effectively plucked the 10 months out of the air (based on one spring run-off season), without giving any meaningful consideration to the amount of time it would actually take for the agreed-upon water quality protection measures at the Mine to achieve the new final limits. Because Ecology did not conduct any evaluation of the “practicable time” within which the new final limits could be met given actual onsite conditions, the compliance schedule is contrary to law, unsupported by substantial evidence, and arbitrary and capricious. WAC 173-201A-510(4)(b). *See also Center for Biological Diversity v. Bureau of Land Management*, 422 F. Supp. 2d 1115, 1147-48 (N.D. Cal. 2006) (finding that the Fish and Wildlife Service’ reliance on “an unfounded assumption” that “lacks support in the record” was arbitrary and capricious where the Fish and Wildlife Service relied on such “unsubstantiated assumption” to support its decision to justify excluding

portions of critical habitat of a species protected by the Endangered Species Act).

**2. The Interim Limits Themselves Are Unsupported by Substantial Evidence, Are Arbitrary and Capricious, and Are Contrary to Law**

The interim limits included in the Modified 2014 Permit did not reasonably account for existing site conditions, including both pre-mining, water quality conditions and the effects of previously authorized Mine activities. Instead, Ecology generally used the 2007 Permit limits that previously governed discharges of treated water from the MWTP, and applied them at the new surface and groundwater compliance points outside the capture zone where the water quality is different than the treated water. The PCHB recognized this disconnect in its order, but ruled without any explanation or factual findings that “Ecology’s use of the 2007 Permit’s MWTP effluent limits as the basis for the interim limits was not unreasonable and was within its discretion.” PCHB Order, CP 2.1, AR 000001478.

Mr. Banton testified that with respect to the limits for arsenic, iron, and manganese, high levels exist at certain compliance points unaffected by Mine operations because, as historic sampling data shows, arsenic, iron, and manganese are naturally occurring in the area. Banton Testimony, RP 539:2-10, 546:13-547:23. For example, Mr. Banton

testified that sampling data for arsenic in certain naturally mineralized areas consistently exceeded the limits prior to the Mining operations. Banton Testimony, RP 546:4-21. He provided similar testimony with respect to naturally occurring levels of manganese, iron and total suspended solids (“TSS”). *See* Banton Testimony, RP 546:23-547:18; 547:24-550:11. In areas where constituent concentrations naturally exceed interim limits, Crown could not under any circumstances achieve these limits.

Moreover, as discussed above, *supra* Section V.B.2.a and V.C.1, expert testimony at the PCHB Hearing documented that at certain compliance locations near the Mine, the levels of various constituents, such as sulfate, chloride, nitrate and TDS in the groundwater, have been and continue to be impacted by activities previously authorized by Ecology. *See* Banton Testimony, RP 535:14-536:4; 536:14-538:17; 673:9-22. Concentrations of these constituents at certain compliance locations exceed the interim limits regardless of current Mine operations. Banton Testimony, RP 550:12-551:2.

The only reason for Ecology to include interim limits in a discharge permit was to provide a reasonable bridge for the Mine to meet the stricter final permit limits. *See* Ioli Testimony, RP 82:10-15, Myers Testimony, RP 221:14-25. Having such reasonable interim limits was one

of the primary purposes of the Settlement Agreement. *Id.* However, rather than considering the actual existing conditions at the Site and what limits could be reasonably achieved pending implementation of the Water Quality Protection Program, Ecology established interim limits that were based solely on old limits from the 2007 Permit that applied only to end-of-pipe discharges from the MWTP. *See* Myers Testimony, RP 220:13-221:13. As evidenced by the testimony of Mr. Barik, Ecology gave no thought to whether those end-of-pipe MWTP limits were feasible or could be practicably achieved as interim limits at the numerous new compliance points given the historic water quality at those locations. *See* Barik Testimony, RP 947:3-10 (“We carried over the [interim] limits as established in the first permit until December 31, 2014, with some changes . . . but, in the majority of the cases, these were the limits established in the first permit”).

As a result, the interim limits, which apply in ground and surface water, and not at the end of a treatment plant discharge pipe, are not feasible for Crown to achieve, and put Crown at risk of potential enforcement actions and penalties for conditions that are beyond its reasonable control. *See* Myers Testimony, RP 226:14-23 (testifying that while Crown can control end of pipe discharge levels from the MWTP, it cannot control levels at points in the environment where natural conditions

are present at levels higher than permit standards); *see also* Ioli Testimony at 96:18-97:2 (“While we had a water treatment plant effluent quality that we adhered to under the prior [2007] permit, we now, overnight, have an environmental . . . limitation that’s very similar to those constituents [limits] with no opportunity to . . . [transition] from end-of-pipe into the receiving environment because of either historical or natural conditions”).

As demonstrated above, the record does not contain any evidence, much less substantial evidence, to justify Ecology’s arbitrary apples-to-oranges application of end-of-pipe limits to the new in-the-environment interim compliance points. Therefore, the 2014 Permit’s interim limits are arbitrary and capricious, not supported by substantial evidence in the record, and contrary to Ecology’s own regulations that require Ecology to use best professional judgment in setting those limits. *See* RCW 34.05.570(3)(d), (e), (i).<sup>13</sup>

**D. The Capture Zone Requirements Are Not Supported by Substantial Evidence, and Are Arbitrary and Capricious**

Condition S1.A.2 of the Modified 2014 Permit presents a line on a map, designating a “capture zone” boundary, in which Crown is required to contain all mine-impacted water. AR 000001115, 001176-001177 (the

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<sup>13</sup> Although the interim limits are no longer in effect, resolving the validity of those limits is important both because Crown could potentially be exposed to penalties for past noncompliance with the interim limits, and, in the event the Modified 2014 Permit is remanded to Ecology to consider a reasonable compliance schedule, new interim limits will be needed for any future compliance schedule period.

capture zone boundary is depicted on maps included as Appendix B to the Modified 2014 Permit). Ecology defines this capture zone boundary as the farthest extent from the Mine that Mine-related contaminants can be located. *Id.* at AR 000001115. As detailed below, this new capture zone boundary is based on outdated assumptions and modeling, ignores well-accepted hydrologic principles, and fails to account for real life, on the ground, conditions at the Mine. The PCHB upheld the capture zone requirements in the Modified 2014 Permit, without addressing the substantial evidence that the capture zone boundary is arbitrary, capricious, and impossible to maintain.

**1. There Is No Scientific, Technical or Other Rational Basis for the Modified 2014 Permit's Capture Zone Requirements.**

It is undisputed that the modeling Ecology used to delineate the capture zone boundary came from two places: (1) modeling from the FSEIS prepared in conjunction with the original permitting of the Mine; and (2) updated modeling by Golder Associates to prepare monthly interpreted capture zone maps as part of its ongoing work at the Mine. CP 18 at 000001354 (Ecology's Response Brief before the Ferry County Superior Court ("Ecology Response")). However, both the FSEIS modeling and the Golder work were never intended to simulate an area in which all impacted water could be captured and treated, and thus are



inappropriate bases for delineating a boundary line intended to capture all water impacted by mining-related facilities.

David Banton, the expert with by far the most knowledge and experience with the prior modeling, explained that neither the model presented in the FSEIS nor the subsequent groundwater modeling done by Golder was intended to address potential contaminants in surface or shallow subsurface runoff at the Mine. Banton Testimony, RP 476-477, 563-564, 571). Rather, the models – consistent with the physical laws of hydrology – evaluated only the deep bedrock groundwater system that would be influenced by the pumping of the mine dewatering wells. *See* Banton Testimony, RP 560:21-565:6 and 571; *see also* Banton Testimony, RP 754:13-24 (“The capture zone is the point where water would flow to the underground mine sumps or the dewatering wells on one side of the line, and on the other side of the line, the water is moving away...”). Mr. Banton’s opinion was bolstered by expert witness Mr. Robert Sterrett, a nationally-recognized hydrogeologist with decades of experience with groundwater capture zones, who also testified that Ecology’s capture zone boundary was not technically defensible as an area for capturing all Mine-impacted water. Sterrett Testimony, RP 1038:20-1039:2.

Despite the limited scope of the modeling, Ecology used the deep bedrock groundwater capture zone boundaries projected by the FSEIS and

Golder modeling as the sole basis to draw a static line around the surface area of the Mine, within which Crown must capture *all* Mine-impacted water, including un-modeled surface water and shallow subsurface water. CP 18 at 0-000001354 (Ecology Response at 23). Ecology’s only witness, Mr. Barik, tried to dispute the scope of the prior modeling, claiming that the FSEIS did contemplate capture of all water touching the Mine surface. Barik Testimony, RP 920. However, Mr. Barik had no basis (experience, education or otherwise) on which to support that assertion.<sup>14</sup> Moreover, Ecology subsequently acknowledged, contrary to Mr. Barik’s testimony, that “[a]ccording to the FSEIS, the capture zone mapped in the figure represented *the modeled cone of depression created by pumping dewater wells and sumps at the site.*” CP 18 at 000001350 (Ecology Response at 19) (emphasis added). In other words, Ecology ultimately agreed with Mr. Banton’s explanation that the “cone of depression” or “capture zone” is the point where water would flow to the underground mine sumps or the dewatering wells on one side of the line, and on the other side of the line, the water is moving away. Banton Testimony at 754:13-24. The PCHB did not address the basis for the capture zone modeling (*i.e.*, cone of depression or capture zone around the deep mine dewatering wells), and

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<sup>14</sup> It is also worth noting that the FSEIS modeling is outdated and was based only on the best available information in 2006. In the ten years since its development, Crown and Golder have gathered extensive on-the-ground geological and hydrogeological data, which illustrates what is actually happening with the hydrogeology at the Mine.

thus did not account for this evidence in its decision to uphold the capture zone boundary in the Modified 2014 Permit.

The result of Ecology's misapplication of the FSEIS and Golder modeling is yet another permit term that is not technically or practically feasible, and has no rational basis. *See* Banton Testimony, RP 575:5-8 (“[I]t’s not technically feasible to collect all surface water, shallow subsurface, stormwater, vadose zone water, or deep bedrock within that 2014 permit capture zone line.”); *see also* Sterrett Testimony, RP 1038:20-1039:2 (“[T]he capture zone is only, only in the saturated zone, and . . . to draw vertical lines upward that would include interflow and surface waters doesn’t make hydrogeologic sense.”). Again, this is because the line represents only the area within which Crown can feasibly capture, through its deep groundwater pumping system, the water that makes its way to those pumps. To capture all mine-impacted water, including the water at the surface that does not filter to the pumps, the capture zone boundary would need to cover enough area to account for the way that *all* water (surface, subsurface and deep bedrock) moves, which is very different than the capture zone area created by the deep groundwater pumping wells. Banton Testimony, RP 560:21-565:6 (“The model itself models groundwater. The groundwater levels are several hundred feet below ground. They’re within bedrock.”); *see also* Sterrett Testimony, RP

1002:6-1003:4, 1038:9-1039:14. What this would look like precisely, and how large that capture zone would need to be, has never been modeled. Banton Testimony, RP 570:18-571:19 (describing that Ecology did not create a new model to incorporate surface or shallow water, that the basis for the 2014 capture zone line was deep bedrock groundwater modeling, and that applying this line to surface or shallow water “does not make technical sense”); *see also* Sterrett Testimony, RP 1051:10-22 (testifying that “to draw the 2014 capture zone line, Ecology did not develop a new model to include surface or shallow water, but misapplied a model intended for deep groundwater”). Ecology’s use of a scientifically-based capture zone designed for a limited purpose to create a “regulatory”<sup>15</sup> capture zone with an entirely different purpose without any further modeling or analysis, is by definition arbitrary and capricious.

## **2. The Capture Zone Boundary Arbitrarily Excludes Permitted Surface Facilities and Underground Mine Workings.**

The arbitrariness of Ecology’s capture zone boundary is particularly evident given that Ecology drew the boundary in such a way that Ecology-approved existing Mine facilities fall outside the line. As

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<sup>15</sup> In its brief in the lower court proceeding, Ecology dismissed the concerns of Mr. Banton and Mr. Sterrett that the capture zone is not based on science, arguing vaguely that “the capture zone described in the Permit is a regulatory requirement.” Ecology Response at 22. Crown is not certain what Ecology means by this statement, but the law is clear, any permit requirement must have a rational basis and be supported by substantial evidence. *May v. Robertson*, 153 Wash. App. 57, 73-74; 218 P.3d 211, 219 (2009).

Crown Vice President and General Manager, Mr. Mark Ioli, testified, these excluded facilities include part of the Mine's main underground sump, mine roads and storm water infrastructure, all of which Ecology was aware of at the time it issued the Modified 2014 Permit and all of which contain or transport Mine-impacted water. Ioli Testimony, RP 1312:7-1313:4. Thus, from the moment the Modified 2014 Permit became effective, Crown was out of compliance with the Permit's directive that it capture all mine-impacted water within the new capture zone boundary.<sup>16</sup> This happened for the very reasons discussed above – Ecology did nothing to model or otherwise evaluate whether the capture zone created by the deep groundwater pumping wells was an appropriate boundary line within which to require the capture of not only deep groundwater but also surface and shallow subsurface water that never reaches those wells.

For all of the above reasons, the Modified 2014 Permit's capture zone requirements are arbitrary, capricious and not supported by

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<sup>16</sup> Ecology has never disputed the fact that the capture zone boundary excludes existing Mine facilities. Barik Testimony, RP 1199-1202. When asked about this issue, Mr. Barik dismissed Crown's concern testifying that the line on the map does not really matter as "the efficacy of the capture zone is determined by the defined monitoring locations," *Id.* at 1202-03, meaning Ecology only uses the water quality compliance limits to enforce the 2014 Modified Permit. This provides little comfort to Crown, as the Permit very clearly requires, as a distinct requirement from the requirement to meet certain compliance limits at certain compliance points, capture of all mine-impacted water within the capture zone boundary, and Ecology could at any time enforce this provision against Crown. Failure to comply with the requirement also subjects Crown to a possible third party citizen suite under the federal Clean Water Act. 33 U.S.C. §1365.

substantial evidence. As such, the PCHB's finding upholding the 2014 Permit's capture zone boundary and definition should be overturned.

**E. The PCHB and Ferry County Superior Court Rulings on the Effective Date of the Modified 2014 Permit Are Contrary to Law**

The Ferry County Superior Court's Final Order affirming the PCHB's conclusion of law No. 6 addressing when the Modified 2014 Permit went into effect is contrary to law and should be reversed. CP 2.1, AR 000001485.<sup>17</sup>

Section 422(3) of the APA provides in relevant part:

When a licensee has made timely and sufficient application for the *renewal of a license* . . . with reference to any activity of a continuing nature, an existing . . . license does not expire until the application has been *finally* determined by the agency, and, *in case the application is denied or the terms of the new license limited, until the last day for seeking review of the agency order or a later date fixed by order of the reviewing court.*

RCW 34.05.422(3) (emphasis added), appended as **Attachment 10**. The APA definition of a "license" includes NPDES permits, and this provision thus applies to Crown's renewal of the 2007 Permit. *See* RCW 34.05.010(9)(a); *see also Okanogan Highlands Alliance, et al. v. Dep't of*

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<sup>17</sup> Although the 2007 Permit is no longer in effect under any interpretation of the statute, resolution of this issue remains important to Crown. Confirming that the 2007 Permit remained in effect between February 27, 2014 (when Ecology first issued the 2014 Permit) and August 29, 2015 (the last day for Crown to seek judicial review of the PCHB Order) will affect Crown's exposure to enforcement actions and possible civil penalties as a result of non-compliance with the very terms of the Modified 2014 Permit from which Crown seeks relief in this action.

*Ecology, et al.*, PCHB No. 04-064, 2005 WL 878023 (Apr. 12, 2005)  
(Ecology applied RCW § 34.05.422(3) to the renewal of a NPDES Permit).

It is undisputed that the Modified 2014 Permit contains several provisions that are more limited and restrictive than the 2007 Permit. Moreover, Ecology's decision on the renewal of the 2007 Permit was not "finally determined," and Crown could not seek judicial review of the renewed permit, until Crown exhausted its administrative remedies with the PCHB. RCW 34.05.534. Consequently, pursuant to RCW 34.05.422(3), the 2007 Permit did not expire until the last day to seek judicial review of the final PCHB Order, which was on August 29, 2015.

Without providing any statutory analysis or other legal support, the PCHB summarily concluded that the Modified 2014 Permit went into effect on the last day to file an appeal to the PCHB and that Crown was required to file a motion for stay with the PCHB pursuant to RCW 43.21B.320 to prevent the Modified 2014 Permit from being effective during the PCHB appeal. PCHB Order, AR 000001485. The Ferry County court affirmed that conclusion without providing any further analysis. CP 23 (first attachment at p. 3).<sup>18</sup>

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<sup>18</sup> While the Ferry County Superior Court stated both the 2014 Permit and the Modified 2014 Permit went into effect "on the effective dates," the PCHB Order did not address

Those holdings ignore the second clause of RCW 34.05.422(3), which controls a situation where, as here, Ecology not only renewed Crown’s original 2007 Permit, but also limited the terms of that permit in several respects. This language directs that, where a permit is renewed for an existing activity, such as the Buckhorn Mine, and the renewed permit contains more limited terms that would restrict the currently permitted activity, the existing permit remains in effect until the administrative appeal process has been exhausted, and the period for seeking judicial review has expired.<sup>19</sup> See RCW 34.05.422(3) (in cases where “the terms of the new license [have been] limited,” the expiration of the existing license or permit does not occur “until the last day for seeking review of the agency order or a later date fixed by order of the reviewing court”). Otherwise, the additional statutory language referencing both “review of an agency order” and “the reviewing court” would be meaningless. See *State v. Roggenkamp*, 153 Wash.2d 614, 625; 106 P.3d 196, 201 (2005) (a “well-settled principle of statutory construction is that each word of a statute is to be accorded *meaning*”) (internal citations omitted). The final “agency order” in this case is the PCHB Order issued on July 31, 2015,

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whether the 2014 Permit ever went into effect between the time it was issued on February 27, 2014, and when Ecology modified it on April 1, 2015.

<sup>19</sup> The term “agency,” as used in RCW 34.05.422(3), is defined to mean either Ecology or the PCHB. See RCW 34.05.010(2).



and the last day for Crown to seek judicial review of that Order was August 29, 2015.

This permitting framework makes sense as a matter of sound public policy in situations where an agency renews a permit in a manner that will restrict a currently approved activity and require the permittee to undertake new measures that may require a substantial expenditure of economic or human resources, which is exactly what Ecology did at the Mine. In those limited situations, the Washington legislature has determined that the new restrictive requirements will not become effective until the permittee has the opportunity to seek judicial relief.

The PCHB and Ferry County Superior Court's reference to RCW 43.21B.320 was misplaced. Nothing in that statute, which addresses measures for obtaining a stay of an agency order, suggests that it is intended to override the APA provisions at RCW 34.05.422(3), which govern license and permit renewals. Because this appeal challenges Ecology's decision renewing the 2007 Permit, the provisions of RCW 43.05.422(3) apply, and the 2007 Permit remained in effect until 30 days following the PCHB Order. The Ferry County Superior Court's contrary conclusion that the 2007 Permit expired and the renewed permit (and permit modifications) went into effect "on their effective dates," is erroneous and should be reversed. *See* RCW 34.05.570(3)(d).

## **VI. CONCLUSION**

For the reasons stated above, Crown respectfully requests this Court to reverse the Final Order of the Ferry County Superior Court, and remand the Modified 2014 Permit to Ecology with directions to:

- (i) develop new final limits in accordance with applicable regulations and the Implementation Guidance that are based on an appropriate AKART evaluation of what limits can be practicably achieved and a proper evaluation of background water quality;
- (ii) develop a new compliance schedule based on a complete and reasonable evaluation of the timeframe within which the final limits can be met;
- (iii) develop new interim limits that are based on a complete and reasonable evaluation of existing water quality conditions;  
and
- (iv) develop a new definition and delineation of the capture zone that is based on a reasonable and accurate evaluation of the available data and hydrologic modeling, and reflects the approved facilities at the Mine.

Crown further requests that this Court reverse the Ferry County Superior Court's holding affirming PCHB's Conclusion of Law No. 6.

Dated this 25<sup>th</sup> day of September, 2017.

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## CERTIFICATE OF SERVICE

I hereby certify that on the 25<sup>th</sup> day of September, 2017, I served a true and correct copy of the foregoing by the method indicated below, to include electronic mail which the parties have agreed to, and addressed to the following:

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## **VII. APPENDIX**

<u>Attachment 1</u>	2007 Permit, AR 000002019-2065
<u>Attachment 2</u>	Settlement Agreement, AR 000001418-1430
<u>Attachment 3</u>	Modified 2014 Permit, AR 000001120-1122
<u>Attachment 4</u>	WAC 173-200-050
<u>Attachment 5</u>	WAC 173-220-130
<u>Attachment 6</u>	WAC 173-201A-020
<u>Attachment 7</u>	Excerpts from Ecology, Implementation Guidance for the Ground Water Quality Standards (Oct. 2005), AR 000002747
<u>Attachment 8</u>	WAC 173-201A-510 (2014)
<u>Attachment 9</u>	WAC 173-201A-510 (2017)
<u>Attachment 10</u>	RCW 34.05.422

# **Attachment 1**

(Case No. 351998)

Page 1 of 45  
Permit No.: WA-005243-4  
Issuance Date: September 27, 2007  
Effective Date: November 1, 2007  
Expiration Date: October 31, 2012  
Modification Date: June 16, 2009

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
WASTE DISCHARGE PERMIT NO. WA-005243-4

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY  
YAKIMA, WASHINGTON 98902

In compliance with the provisions of  
The State of Washington Water Pollution Control Law  
Chapter 90.48 Revised Code of Washington  
and  
The Federal Water Pollution Control Act  
(The Clean Water Act)  
Title 33-United States Code, Section 1251 et seq.

CROWN RESOURCES CORPORATION  
363 FISH HATCHERY ROAD  
REPUBLIC, WA 99166

Facility Location: Approximately 3.5 miles east of Chesaw, WA	Receiving Water: Outfall 001: Ground water at infiltration gallery Outfall 002: Gold Bowl Creek Outfall 003: South Fork Nicholson Creek Outfall 004: Marias Creek
Receiving Water:	Discharge Location:
Outfall 001 - Ground water	Outfall 001 Latitude: 48° 57' 1.69" N Longitude: 118° 58' 7.57" W
Outfall 002 - Gold Bowl Creek	Outfall 002 Latitude: 48° 57' 4.93" N Longitude: 118° 58' 42.42" W
Outfall 003 - South Fork Nicholson Creek	Outfall 003 Latitude: 48° 56' 42" N Longitude: 118° 58' 25.82" W
Outfall 004 - Marias Creek	Outfall 004 Latitude: 48° 26' 35.09" N Longitude: 118° 58' 16.72" W
Industry Type: Underground gold mining, SIC Code 1041	

is authorized to discharge in accordance with the special and general conditions which follow.

Jonathan Merz  
Acting Section Manager  
Water Quality Program  
Central Regional Office  
Washington State Department of Ecology

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### SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions of this permit for additional submittal requirements.

Permit Section	Submittal	Frequency	First Submittal Date
S1.E.	Treatment Plant Initial Discharge Notification	1/permit cycle	At least 10 days prior to initial discharge
S1.F.	Notification of Mine Closure	As necessary	At least 60 days prior to closure
S2.	Plan for citizen observation of water sampling	1/permit cycle	December 1, 2007
S3.A.	Discharge Monitoring Report	Monthly	December 15, 2007
S3.E.	Noncompliance Notification	As necessary	
S4.A.	Operations and Maintenance Manual	1/permit cycle	120 days from first discharge from treatment plant
S4.A.	Operations and Maintenance Manual Update or Review Confirmation Letter	Annually	
S4.A.	Treatment System Operating Plan	1/permit cycle	With Operations and Maintenance Manual
S4.B.	Reporting Bypasses	As necessary	
S4.D.	Upset from Storms Larger than Design Storm Event	As necessary	
S5.	Application for Permit Renewal	1/permit cycle	October 31, 2011
S6.C.	Solid Waste Control Plan	1/permit cycle	May 1, 2008
S6.C.	Modification to Solid Waste Plan	As necessary	
S7.A.	Updates to Engineering Report	As necessary	120 days prior to modification
S7.B.	Plans and Specifications	As necessary	60 days after S7.A engineering report approval date
S7.C.1.	Scope of Work for Engineering Report to determine Treatment Plant Operational Monitoring Plan	1/permit cycle	December 1, 2007
S7.C.2.	Engineering Report with Treatment Plant Operational Monitoring Plan	1/permit cycle	90 days from first discharge from treatment plant
S9.	Spill Plan	1/permit cycle, updates submitted as necessary	December 1, 2007
S10.A.	Acute Toxicity Characterization Data	May and September of 2009 and 2010	60 days after each sampling event
S10.A.	Acute Toxicity Tests Characterization Summary Report	December 15, 2009 and 2010	

Permit Section	Submittal	Frequency	First Submittal Date
S10.C.	Acute Toxicity Compliance Monitoring Reports	As necessary	
S10.D.	Acute Toxicity: "Causes and Preventative Measures for Transient Events."	As necessary	
S10.D.	Acute Toxicity TI/TRE Plan	As necessary	
S10.E.	Acute Toxicity Effluent Test Results with Permit Renewal Application	1/permit cycle	October 31, 2011
S11.A.	Chronic Toxicity Characterization Data	May and September of 2009 and 2010	60 days after each sampling event
S11.A.	Chronic Toxicity Tests Characterization Summary Report	December 15, 2009 and 2010	
S11.C.	Chronic Toxicity Compliance Monitoring Reports	As necessary	
S11.D.	Chronic Toxicity: "Causes and Preventative Measures for Transient Events."	As necessary	
S11.D.	Chronic Toxicity TI/TRE Plan	As necessary	
S11.E.	Chronic Toxicity Effluent Test Results with Permit Renewal Application	2/permit cycle	October 31, 2011
S12.B.2.	Stormwater Pollution Prevention Plan Modifications	As necessary	
S12.C.2.	Notification of Unpermitted non-stormwater discharges to Stormwater Drainage System	As necessary	
S13.	Development Rock Management Plan Modifications	As necessary	
S14.	Adaptive Management Plan Modifications	As necessary	
S15.	Hydrologic Monitoring Plan Modifications	As necessary	
S16.	Environmental Protection Performance Security Modifications	As necessary	
S17.	Wildlife Mitigation Plan Modifications	As necessary	
S18.	Brine Management Plan	1/permit cycle	January 1, 2008
S18.	Brine Management Plan Modifications	As necessary	
G1.	Signature Authorization/Delegation	As necessary	
G4.	Permit Application for Substantive Changes to the Discharge	As necessary	
G5.	Engineering Report for Construction or Modification Activities	As necessary	
G8.	Notice of Permit Transfer	As necessary	
G21.	Reporting Anticipated Non-compliance	As necessary	
G22.	Reporting Other Information	As necessary	

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Permit No.: WA-005243-4  
Expiration Date: October 31, 2012  
Modification Date: June 16, 2009

## SPECIAL CONDITIONS

### S1. DISCHARGE LIMITATIONS

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

Discharges must not cause erosion or create slope instability.

For all monitoring, the Permittee must use methods that can achieve a minimum level (ML) less than the effluent limitation. If the effluent limit is less than the minimum level of the most sensitive EPA-approved analytical method, the Permittee must use the most sensitive EPA-approved analytical method. For parameters that do not have effluent limitations, the Permittee may use any EPA-approved method for analysis.

The discharge of any of the following pollutants at a level in excess of that identified and authorized by this permit constitutes a violation of the terms and conditions of this permit.

### A. Mine Water and Stockpile Stormwater Discharges

Beginning on October 1, 2007 and lasting through September 30, 2012, the Permittee is authorized to discharge mine water and stockpile stormwater at Outfalls 001, 002, 003, and 004 subject to complying with the following limitations:

	EFFLUENT LIMITATIONS: Treatment Plant Effluent	
Parameter	Average Monthly <sup>c</sup>	Maximum Daily <sup>d</sup>
Ammonia, Total (as N <sup>a</sup> ) (mg/L) <sup>b</sup>	0.384	0.770
Antimony, Total Recoverable (mg/L)	0.014	N/A
Arsenic Total Recoverable (mg/L) <sup>e</sup>	<0.001	<0.001
Cadmium, Total Recoverable (mg/L)	0.0013	0.0027
Chloride (mg/L)	250	N/A
Chlorine, Total Residual (mg/L)	0.008	0.019
Chromium, Total Recoverable (mg/L)	0.05	N/A
Copper, Total Recoverable (mg/L)	0.014	0.026
Fluoride (mg/L)	4	N/A
Iron, Total Recoverable (mg/L)	0.30	N/A
Lead, Total Recoverable (mg/L)	0.005	0.009
Manganese, Total Recoverable (mg/L)	0.050	N/A
Mercury, Total Recoverable (mg/L)	0.00001	0.00002
Nickel, Total Recoverable (mg/L)	0.186	0.373
Nitrate (as N) (mg/L)	10	N/A
Oil and Grease (mg/L)	10	15
Selenium, Total Recoverable (mg/L)	0.004	0.008
Silver, Total Recoverable (mg/L)	0.004	0.009
Sulfate (mg/L)	250	N/A
Thallium, Total Recoverable (mg/L)	0.017	N/A
Total Dissolved Solids (mg/L)	500	N/A
Total Residual Chlorine (mg/L)	.008	.019
Total Suspended Solids (mg/L)	20	30
Turbidity (NTU) <sup>f</sup>	15	22
Zinc, Total Recoverable (mg/L)	0.083	0.166
pH (SU) <sup>g</sup>	Daily minimum is equal to or greater than 6.5 and the daily maximum is less than or equal to 8.5	
<sup>a</sup> Nitrogen		
<sup>b</sup> milligrams per Liter		
<sup>c</sup> The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.		
<sup>d</sup> The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day.		
<sup>e</sup> The method detection level (MDL) for arsenic is 0.001mg/L using graphite furnace atomic absorption spectrometry and EPA method number 206.2 from 40 CFR Part 136. The quantitation level for arsenic is 0.005 mg/L (5 x MDL).		
<sup>f</sup> Nephelometric Turbidity Units		
<sup>g</sup> Standard Units		

## B. Stormwater Discharges

### 1. Upper Portal and Lower Portal Industrial Areas

Beginning on November 1, 2007 and lasting through October 31, 2012, the Permittee is authorized to discharge stormwater to ground water from the Upper Portal Stormwater Retention Pond and the Lower Portal Stormwater Retention Pond to Outfall 002, subject to complying with the following limitations:

	EFFLUENT LIMITATIONS: Upper Portal and Lower Portal Stormwater Retention Ponds	
Parameter	Average Monthly <sup>a</sup>	Maximum Daily <sup>b</sup>
Total Dissolved Solids (mg/L)	500	N/A
Chloride (mg/L)	250	N/A
Oil and Grease (mg/L)	10	15
Copper, Total Recoverable (mg/L)	0.013	0.027
Lead, Total Recoverable (mg/L)	0.005	0.009
Zinc, Total Recoverable (mg/L)	0.083	0.166
pH (SU)	Daily minimum is equal to or greater than 6.5 and the daily maximum is less than or equal to 8.5	
<sup>a</sup> The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.		
<sup>b</sup> The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day.		

### 2. Undisturbed Areas and Non-Industrial Areas

A. Beginning on November 1, 2007 and lasting through October 31, 2012, the Permittee is authorized to discharge stormwater to ground water from Detention Pond DA3, Detention Pond DA4, Infiltration Trench 1, and Infiltration Trench 2, to Outfall 002 subject to complying with the following limitations:

EFFLUENT LIMITATIONS: Stormwater Detention Ponds DA3 and DA4 Infiltration Trenches 1 and 2		
Parameter	Average Monthly <sup>a</sup>	Maximum Daily <sup>b</sup>
Total Dissolved Solids (mg/L)	500	N/A
Chloride (mg/L)	250	N/A
Oil and Grease (mg/L)	10	15
pH (SU)	Daily minimum is equal to or greater than 6.5 and the daily maximum is less than or equal to 8.5	
<sup>a</sup> The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.		
<sup>b</sup> The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day.		

- B. Beginning on November 1, 2007 and lasting through October 31, 2012, the Permittee is authorized to discharge stormwater overflow from Infiltration Trenches 1 and 2 to Outfall 002 subject to complying with the following limitations:

	EFFLUENT LIMITATIONS: Infiltration Trenches 1 and 2	
Parameter	Average Monthly <sup>a</sup>	Maximum Daily <sup>b</sup>
Total Suspended Solids (mg/L)	20	30
Turbidity (NTU)	15	22
Oil and Grease (mg/L)	10	20
Chloride (mg/L)	250	N/A
pH (SU)	Daily minimum is equal to or greater than 6.5 and the daily maximum is less than or equal to 8.5	
<sup>a</sup> The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.		
<sup>b</sup> The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day.		

#### C. Infiltration Gallery

Treated wastewater discharges to ground water at the infiltration gallery (Outfall 001) must not cause slope instability or rise to less than 1 foot of the ground surface as measured in the piezometers at the gallery site.

#### D. Capture Zone

The Permittee must establish and maintain a ground water capture zone to include all underground mine workings, the surge pond, and all surface stockpiles of ore and development rock.

#### E. Treatment Plant Initial Discharge Notification

The Permittee must provide written notification to Ecology at least 10 days prior to the date of start-up and initial discharge from the treatment plant.

#### F. Closure Requirements

The Permittee must provide written notification to Ecology at least 60 days prior to temporary or permanent closure of the mine. The Permittee must continue monitoring according to the Monitoring Requirements, Condition S2., and the Hydrologic Monitoring Plan, Condition S15. A temporary closure becomes a permanent closure when no mining has occurred for 2 years.

## S2. MONITORING REQUIREMENTS

The Permittee must prepare a plan that provides for citizen observation and verification of the water sampling requirements of this permit. The plan must conform to RCW78.56.100(1)(c). The plan must be submitted to Ecology for review and approval by December 1, 2007.

The Permittee must monitor in accordance with the following schedule:

### A. Treated Mine Water and Stockpile Storm Water Monitoring Schedule

The Permittee must investigate treatment plant operational effluent and identify indicator parameters and monitoring frequencies as required in Condition S7.C.1.

The Permittee must monitor water quality at the following locations:

- Lowest elevation mine sump in the Southwest Zone workings
- Lowest elevation mine sump in the Gold Bowl workings
- Influent to the treatment plant

The Permittee must monitor water quality at the above locations according to the following table:

Parameter	Units	Minimum Sampling Frequency	Sample Type
Flow	gpm	Continuous <sup>a</sup>	Flow meter
pH	SU	Bi-Weekly <sup>b</sup> , or more frequently as specified in the Operations and Maintenance Manual	Grab
Temperature	°C	"	"
Dissolved Oxygen	mg/L	"	"
Turbidity	NTU	"	"
Specific Conductance	µS/cm <sup>c</sup>	"	"
Hardness	mg/L	"	"
Total Dissolved Solids	mg/L	"	"
Chloride	mg/L	"	"
Sulfate	mg/L	"	"
Nitrate+Nitrite (as N)	mg/L	"	"
Fluoride	mg/L	"	"
Ammonia, Total (as N)	mg/L	"	"
Alkalinity	mg/L	"	"
Bicarbonate	mg/L	"	"
Calcium	mg/L	"	"
Magnesium	mg/L	"	"
Antimony <sup>d</sup>	mg/L	"	"
Arsenic <sup>d</sup>	mg/L	"	"
Beryllium <sup>d</sup>	mg/L	"	"



Parameter	Units	Minimum Sampling Frequency	Sample Type
Cadmium <sup>d</sup>	mg/L	"	"
Copper <sup>d</sup>	mg/L	"	"
Chromium <sup>d</sup>	mg/L	"	"
Lead <sup>d</sup>	mg/L	"	"
Mercury <sup>d</sup>	mg/L	"	"
Selenium <sup>d</sup>	mg/L	"	"
Silver <sup>d</sup>	mg/L	"	"
Thallium <sup>d</sup>	mg/L	"	"
Aluminum <sup>d</sup>	mg/L	"	"
Iron <sup>d</sup>	mg/L	"	"
Manganese <sup>d</sup>	mg/L	"	"
Nickel <sup>d</sup>	mg/L	"	"
Zinc <sup>d</sup>	mg/L	"	"
Oil and Grease	mg/L	"	"
Total Suspended Solids	mg/L	"	"
<sup>a</sup> Continuous means uninterrupted -- except for brief lengths of time for calibration, power failure, or for unanticipated equipment repair or maintenance.			
<sup>b</sup> Bi-weekly means every two weeks			
<sup>c</sup> micro Siemens per centimeter			
<sup>d</sup> Measured as Total Recoverable			

- Treated effluent from the treatment plant

The Permittee must monitor water quality at the above location according to the following table:

Parameter	Units	Minimum Sampling Frequency	Sample Type
Flow	gpm	Continuous <sup>a</sup>	Flow meter
pH	SU	Bi-Weekly <sup>b</sup> , or more frequently as specified in the Operations and Maintenance Manual	Grab
Temperature	°C	"	"
Dissolved Oxygen	mg/L	"	"
Turbidity	NTU	"	"
Specific Conductance	µS/cm <sup>c</sup>	"	"
Hardness	mg/L	"	"
Total Dissolved Solids	mg/L	"	"
Chloride	mg/L	"	"
Sulfate	mg/L	"	"
Nitrate+Nitrite (as N)	mg/L	"	"

Parameter	Units	Minimum Sampling Frequency	Sample Type
Fluoride	mg/L	"	"
Ammonia, Total (as N)	mg/L	"	"
Alkalinity	mg/L	"	"
Bicarbonate	mg/L	"	"
Calcium	mg/L	"	"
Magnesium	mg/L	"	"
Antimony <sup>d</sup>	mg/L	"	"
Arsenic <sup>d</sup>	mg/L	"	"
Beryllium <sup>d</sup>	mg/L	"	"
Cadmium <sup>d</sup>	mg/L	"	"
Copper <sup>d</sup>	mg/L	"	"
Chromium <sup>d</sup>	mg/L	"	"
Lead <sup>d</sup>	mg/L	"	"
Mercury <sup>d</sup>	mg/L	"	"
Selenium <sup>d</sup>	mg/L	"	"
Silver <sup>d</sup>	mg/L	"	"
Thallium <sup>d</sup>	mg/L	"	"
Aluminum <sup>d</sup>	mg/L	"	"
Iron <sup>d</sup>	mg/L	"	"
Manganese <sup>d</sup>	mg/L	"	"
Nickel <sup>d</sup>	mg/L	"	"
Zinc <sup>d</sup>	mg/L	"	"
Oil and Grease	mg/L	"	"
Total Suspended Solids	mg/L	"	"
Total Residual Chlorine	mg/L	5/week	"
<sup>a</sup> Continuous means uninterrupted -- except for brief lengths of time for calibration, power failure, or for unanticipated equipment repair or maintenance.			
<sup>b</sup> Bi-weekly means every two weeks			
<sup>c</sup> micro Siemens per centimeter			
<sup>d</sup> Measured as Total Recoverable			

## B. Ground Water Monitoring Schedule

1. Depth-to-water at the Infiltration Gallery must be measured at each of the following:
  - Existing piezometers P-1, P-2, and P-3
  - New piezometers P-1a, P-2a, P-3a, and P-4a
  - Existing monitoring well MW-3
  - New monitoring well MW-13

The depth-to-water measurements must demonstrate that effluent from the treatment plant that is discharged to ground water at the Infiltration Gallery does not rise to less than one foot of the surface.

The new monitoring well and the new piezometers must be installed prior to the first discharges into the infiltration gallery.

Water quality monitoring and depth-to-water measurements in the new well and new piezometers must begin with the first month after installation, or before the first discharges into the infiltration gallery, whichever occurs first.

2. The permittee must measure depth-to-water in mine site piezometers according to the schedule listed in Table 1-5, Piezometer Locations, of the Hydrologic Monitoring Plan, Condition S15. Some of the piezometers in Table 1-5 could become unserviceable due to mining activities and may need replacement; some of the new piezometers are located on National Forest land that may not be immediately accessible for installing the piezometers. As a result, temporary piezometers may need to be installed at alternate locations to demonstrate the extent of the required ground water capture, Condition S1.D.
3. New piezometers and replacement piezometers must be installed prior to the start of mine dewatering.
4. Depth to water measurements must be obtained monthly at a minimum, or more frequently by following the schedule in the Adaptive Management Plan, Condition S14.
5. The sampling locations for ground water quality will be:
  - Existing monitoring wells: MW-1, MW-2, MW-3, MW-4, MW-6, MW-7, and MW-9
  - New monitoring wells: MW-13, MW-14, and MW-15
  - New mine dewatering wells: D-1, D-2, D-3, D-4, and D-5
  - New domestic water supply well.

Ground water at the above locations must be sampled according to this table:

Parameter	Units	Sample Points	Minimum Sampling Frequency	Sample Type
Flow	gpm	Treatment Plant Monitoring Port	Continuous <sup>b</sup>	Flow meter
Depth-to-water	0.01 foot	Wells listed above	1/quarter <sup>c</sup>	Measured
pH	SU	"	"	Grab
Temperature	°C	"	"	"
Dissolved Oxygen	mg/L	"	"	"
Turbidity	NTU	"	"	"
Specific conductance	µS/cm	"	"	"
Hardness	mg/L	"	"	"
Total Dissolved Solids	mg/L	"	"	"
Chloride	mg/L	"	"	"
Sulfate	mg/L	"	"	"
Nitrate+Nitrite (as N)	mg/L	"	"	"
Fluoride	mg/L	"	"	"
Ammonia, Total (as N)	mg/L	"	"	"
Alkalinity	mg/L	"	"	"
Bicarbonate	mg/L	"	"	"
Calcium	mg/L	"	"	"
Magnesium	mg/L	"	"	"
Antimony <sup>a</sup>	mg/L	"	"	"
Arsenic <sup>a</sup>	mg/L	"	"	"
Beryllium <sup>a</sup>	mg/L	"	"	"
Cadmium <sup>a</sup>	mg/L	"	"	"
Copper <sup>a</sup>	mg/L	"	"	"
Chromium <sup>a</sup>	mg/L	"	"	"
Lead <sup>a</sup>	mg/L	"	"	"
Mercury <sup>a</sup>	mg/L	"	"	"
Selenium <sup>a</sup>	mg/L	"	"	"
Silver <sup>a</sup>	mg/L	"	"	"
Thallium <sup>a</sup>	mg/L	"	"	"
Aluminum <sup>a</sup>	mg/L	"	"	"
Iron <sup>a</sup>	mg/L	"	"	"
Manganese <sup>a</sup>	mg/L	"	"	"
Nickel <sup>a</sup>	mg/L	"	"	"
Zinc <sup>a</sup>	mg/L	"	"	"

<sup>a</sup>Measured as Total Metals  
<sup>b</sup>Continuous means uninterrupted-except for brief lengths of time for calibration, power failure, or for unanticipated equipment repair or maintenance. Sampling shall be taken hourly when continuous monitoring is not possible.  
<sup>c</sup>Quarters are defined as follows: 1<sup>st</sup> - January to March; 2<sup>nd</sup> - April to June; 3<sup>rd</sup> - July to September; 4<sup>th</sup> - October to December

### C. Mine Site Surface Water Monitoring Schedule

The sampling locations for surface water quality in the vicinity of the mine are:

- Existing surface water monitoring stations: SW-7, SW-8, SW-9, SW-14, and GW-2 (Roosevelt Adit)
- Existing springs and seeps: JJ-14, JJ-15, JJ-16, JJ-18, JJ-20, JJ-21, JJ-26, and SN-22

Surface water quality at the above locations must be sampled according to this table:

Parameter	Units	Sample Points	Minimum Sampling Frequency	Sample Type
Flow	gpm	Surface water sites listed above	Monthly	Grab
pH	SU	"	"	"
Temperature	°C	"	"	"
Dissolved Oxygen	mg/L	"	"	"
Specific conductance	µS/cm	"	"	"
Hardness	mg/L	"	"	"
Total Dissolved Solids	mg/L	"	"	"
Chloride	mg/L	"	"	"
Sulfate	mg/L	"	"	"
Nitrate+Nitrite (as N)	mg/L	"	"	"
Fluoride	mg/L	"	"	"
Ammonia, Total (as N)	mg/L	"	"	"
Alkalinity	mg/L	"	"	"
Bicarbonate	mg/L	"	"	"
Calcium	mg/L	"	"	"
Magnesium	mg/L	"	"	"
Antimony <sup>a</sup>	mg/L	"	"	"
Arsenic <sup>a</sup>	mg/L	"	"	"
Beryllium <sup>a</sup>	mg/L	"	"	"
Cadmium <sup>a</sup>	mg/L	"	"	"
Chromium <sup>a</sup>	mg/L	"	"	"
Copper <sup>a</sup>	mg/L	"	"	"
Lead <sup>a</sup>	mg/L	"	"	"
Mercury <sup>a</sup>	mg/L	"	"	"
Selenium <sup>a</sup>	mg/L	"	"	"
Silver <sup>a</sup>	mg/L	"	"	"
Thallium <sup>a</sup>	mg/L	"	"	"
Aluminum <sup>b</sup>	mg/L	"	"	"
Iron <sup>b</sup>	mg/L	"	"	"
Manganese <sup>a</sup>	mg/L	"	"	"
Nickel <sup>a</sup>	mg/L	"	"	"

Parameter	Units	Sample Points	Minimum Sampling Frequency	Sample Type
Zinc <sup>a</sup>	mg/L	"	"	"
Turbidity and Total Suspended Solids	NTU mg/L	"	Monthly, except Bi-Weekly <sup>c</sup> at SW-7, SW-8, and SW-9 during April, May, and June	"
<sup>a</sup> Measured as Dissolved				
<sup>b</sup> Measured as Total Recoverable				
<sup>c</sup> Bi-Weekly means every two weeks				

#### D. Marias Creek Haul Road Surface Water Quality Monitoring Schedule

The permittee must conduct routine surface water quality sampling in Marias Creek in the vicinity of the haul road at monitoring sites MC-1, MC-2, and MC-3 according to the following:

Parameter	Units	Sample Points	Minimum Sampling Frequency	Sample Type
pH	SU	MC-1, MC-2, MC-3	Monthly	Grab
Temperature	°C	"	"	"
Dissolved Oxygen	mg/L	"	"	"
Specific Conductance	µS/cm	"	"	"
Sodium	mg/L	"	"	"
Magnesium	mg/L	"	"	"
Chloride	mg/L	"	Bi-Weekly <sup>a</sup>	"
Turbidity and Total Suspended Solids	NTU mg/L	"	Monthly, except Bi-Weekly <sup>a</sup> during April, May, and June	"
Turbidity	NTU	MC-1 and MC-3	Continuous <sup>b</sup>	Recorded
<sup>a</sup> Bi-Weekly means every two weeks				
<sup>b</sup> When weather conditions allow at US Forest Service established monitoring sites				

**E. Stormwater Discharges from Industrial Areas**

The Permittee must sample stormwater retained in the Upper Portal Retention Pond and the Lower Portal Retention Pond at the sample points in the Operational SWPPP (Condition S12.) according to the following:

Parameter	Units	Sample Points	Sample Frequency	Sample Type
Total Dissolved Solids	mg/L	SSW3 and SSW4	Monthly when stormwater is present	Grab
Oil and Grease	mg/L	"	"	"
Copper <sup>a</sup>	mg/L	"	"	"
Lead <sup>a</sup>	mg/L	"	"	"
Zinc <sup>a</sup>	mg/L	"	"	"
pH	SU	"	"	"
Specific Conductance	µS/cm	"	"	"
Temperature	°C	"	"	"
Calcium	mg/L	"	"	"
Chloride	mg/L	"	"	"
Magnesium	mg/L	"	"	"
<sup>a</sup> Measured as Total Recoverable				

**F. Stormwater Discharges from Undisturbed Areas and Non-Industrial Areas**

The Permittee must sample stormwater overflow from Infiltration Trenches 1 and 2 at the sample points in the Operational SWPPP (Condition S12.) according to the following:

Parameter	Units	Sample Points	Minimum Sample Frequency	Sample Type
Total Suspended Solids	mg/L	SSW1 and SSW2	Monthly when discharging	Grab
Turbidity	NTU	"	"	"
Oil and Grease	mg/L	"	"	"
pH	SU	"	"	"
Chloride	mg/L	"	"	"

The Permittee must sample stormwater retained in Detention Ponds DA3 and DA4 at the sample points in the Operational SWPPP (Condition S12.) according to the following:

Parameter	Units	Sample Points	Sample Frequency	Sample Type
Total Dissolved Solids	mg/L	SSW7 and SSW8	Monthly when stormwater is present	Grab
Oil and Grease	mg/L	"	"	"
pH	SU	"	"	"
Specific conductance	µS/cm	"	"	"
Temperature	°C	"	"	"
Calcium	mg/L	"	"	"
Chloride	mg/L	"	"	"
Magnesium	mg/L	"	"	"

The Permittee must sample overflow from Detention Ponds DA3 and DA4 to Infiltration Trenches 1 and 2 at the sample points in the Operational SWPPP (Condition S12.) according to the following:

Parameter	Units	Sample Points	Minimum Sample Frequency	Sample Type
Total Dissolved Solids	mg/L	SSW11 and SSW12	Monthly when discharging	Grab
Oil and Grease	mg/L	"	"	"
pH	SU	"	"	"
Specific conductance	µS/cm	"	"	"
Temperature	°C	"	"	"
Calcium	mg/L	"	"	"
Chloride	mg/L	"	"	"
Magnesium	mg/L	"	"	"

#### G. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit must be representative of the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136.



#### H. Flow Measurement

Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the quantity of monitored flows. The devices must be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted industry standard for that type of device. Frequency of calibration must be in conformance with manufacturer's recommendations. Calibration records must be maintained for at least three years.

#### I. Laboratory Accreditation

All monitoring data required by Ecology must be prepared by a laboratory registered or accredited under the provisions of, Accreditation of Environmental Laboratories, Chapter 173-50 WAC. Flow, temperature, settleable solids, conductivity, pH, turbidity, and internal process control parameters are exempt from this requirement. Conductivity and pH must be accredited if the laboratory must otherwise be registered or accredited. Ecology exempts crops, soils, and hazardous waste data from this requirement pending accreditation of laboratories for analysis of these media.

### S3. REPORTING AND RECORDING REQUIREMENTS

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

#### A. Reporting

The first monitoring period begins on November 1, 2007. The Permittee must submit monitoring results each month. The Permittee must summarize, report, and submit monitoring data obtained during each monitoring period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by Ecology. The Permittee must ensure that DMR forms are postmarked or received by Ecology no later than the 15th day of the month following the completed monitoring period. The Permittee must submit priority pollutant analysis data no later than 45 days following the monitoring period. Unless otherwise specified, the Permittee must submit all toxicity test data within 60 days after the sample date.

The Permittee must send report(s) to:

Permit Data Systems Manager  
Department of Ecology  
Central Regional Office  
15 West Yakima Avenue, Suite 200  
Yakima, Washington 98902

All laboratory reports providing data for organic and metal parameters must include the following information: sampling date, sample location, date of analysis, parameter name, CAS number, analytical method/number, method detection limit (MDL), laboratory practical quantitation limit (PQL), reporting units, and concentration detected. Analytical results from

samples sent to a contract laboratory must include information on the chain of custody, the analytical method, QA/QC results, and documentation of accreditation for the parameter.

The Permittee must submit DMR forms monthly whether or not the facility was discharging. If there was no discharge during a given monitoring period, the Permittee must submit the form as required with the words "no discharge" entered in place of the monitoring results.

#### **B. Records Retention**

The Permittee must retain records of all monitoring information for a minimum of 3 years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. During the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology, the Permittee must extend this period of retention.

#### **C. Recording of Results**

For each measurement or sample taken, the Permittee must record the following information: (1) the date, exact place, method, and time of sampling or measurement; (2) the individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) the individual who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

#### **D. Additional Monitoring by the Permittee**

If the Permittee monitors any pollutant more frequently than required by Condition S2. of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR.

#### **E. Twenty-four Hour Notice of Noncompliance Reporting**

1. The Permittee must take the following action upon violation of any permit condition:

Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem and, if applicable, immediately repeat sampling and analysis. The Permittee must submit results of any repeat sampling to Ecology within 30 days of sampling.

2. The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at 509/575-2490, within 24 hours from the time the Permittee becomes aware of the circumstances:
  - a. any noncompliance that may endanger health or the environment;
  - b. any unanticipated bypass that exceeds any effluent limitation in the permit (See Part S4.B., "Bypass Procedures");
  - c. any upset that exceeds any effluent limitation in the permit (See G.15, "Upset");

- d. any violation of a maximum daily or instantaneous maximum discharge limitation for any of the pollutants in S1.A.; or
  - e. any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limitation in the permit.
3. The Permittee must also provide a written submission within five days of the time that the Permittee becomes aware of any event required to be reported under subpart 2, above. The written submission must contain:
- a. a description of the noncompliance and its cause;
  - b. the period of noncompliance, including exact dates and times;
  - c. the estimated time noncompliance is expected to continue if it has not been corrected;
  - d. steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance; and
  - e. if the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.
4. Ecology may waive the written report on a case-by-case basis if the oral report has been received within 24 hours of the noncompliance.
5. The Permittee must submit reports to the address in S3. ("REPORTING AND RECORDKEEPING REQUIREMENTS").

#### F. Other Noncompliance Reporting

The Permittee must report all instances of noncompliance, not required to be reported within 24 hours, at the time the Permittee submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in paragraph E3 above, ("Twenty-four Hour Notice of Noncompliance Reporting"). Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

The spill of oil or hazardous materials must be reported in accordance with the instructions obtained at the following website: <http://www.ecy.wa.gov/programs/spills/other/reportspill.htm>

#### G. Maintaining a Copy of This Permit

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

#### S4. OPERATION AND MAINTENANCE

The Permittee must, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances) which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

#### A. Operations and Maintenance Manual

An Operations and Maintenance (O&M) Manual must be prepared by the Permittee in accordance with WAC 173-240-150 and be submitted to Ecology for approval within 120 days of starting to discharge treated water from treatment plant.

The approved O & M Manual must be kept available at the permitted facility and all operators must follow the instructions and procedures of this manual.

In addition to the requirements of WAC 173-240-150(1) and (2), the O&M Manual must include:

1. Emergency procedures for plant shutdown and cleanup in event of wastewater system upset or failure.
2. Wastewater system maintenance procedures that contribute to the generation of process wastewater.
3. Any directions to maintenance staff when cleaning, or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (e.g., defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine).
4. The treatment plant operational water quality monitoring plan, Condition S7.C.

The following information must be summarized in the initial chapter of the O&M Manual. This chapter must be entitled the "Treatment System Operating Plan." For the purposes of this NPDES permit, a Treatment System Operating Plan (TSOP) is a concise summary of specifically defined elements of the O&M Manual. The TSOP must not conflict with the O&M Manual and must include the following information:

1. A baseline operating condition which describes the operating parameters and procedures used to meet the effluent limitations of Special Condition S1 at the production levels used in developing these limitations.
2. In the event production rates are below the baseline levels used to establish these limitations, the plan must describe the operating procedures and conditions needed to maintain design treatment efficiency. The monitoring and reporting must be described in the plan.
3. In the event of an upset, due to plant maintenance activities, severe stormwater events, start ups or shut downs, or other causes, the plan must describe the operating procedures and conditions employed to mitigate the upset. The monitoring and reporting must be described in the plan.

4. A description of any regularly scheduled maintenance or repair activities at the facility which would affect the volume or character of the wastes discharged to the wastewater treatment system and a plan for monitoring and treating/controlling the discharge of maintenance-related materials (such as cleaners, degreasers, solvents, etc.).
5. An updated TSOP must be submitted to Ecology with the application for renewal 180 days prior to expiration of the permit. This plan must be updated and submitted, as necessary, to include requirements for any major modifications of the treatment system.

The O&M Manual and the TSOP must be reviewed by the Permittee at least annually and the Permittee must confirm this review by letter to Ecology. Substantial changes or updates to the O&M Manual must be submitted to Ecology for review and approval whenever they are incorporated into the manual.

#### **B. Bypass Procedures**

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited, and Ecology may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, or 3) is applicable.

1. Bypass is for Essential Maintenance without the Potential to Cause Violation of Permit Limits or Conditions.

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or to adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least 10 days before the date of the bypass.

2. Bypass is Unavoidable; Unanticipated, and Results in Noncompliance of this Permit.

This bypass is permitted only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
- b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.
- c. Ecology is properly notified of the bypass as required in Special Condition S3.E of this permit.

3. Bypass is Anticipated and has the Potential to Result in Noncompliance of this Permit.

The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain: (1) a description of the bypass and its cause; (2) an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing; (3) a cost-effectiveness analysis of alternatives including comparative resource damage assessment; (4) the minimum and maximum duration of bypass under each alternative; (5) a recommendation as to the preferred alternative for conducting the bypass; (6) the projected date of bypass initiation; (7) a statement of compliance with SEPA; (8) a request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated; and (9) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above must be considered during preparation of the engineering report or facilities plan, and plans and specifications and must be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

Ecology will consider the following prior to issuing an administrative order for this type bypass:

- a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. The public must be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by Ecology under RCW 90.48.120.

**C. Duty to Mitigate**

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

**D. Upset from Storms Larger than Design Storm Event.**

Discharges from stormwater control structures due to precipitation amounts larger than the design storm event are subject to the upset provisions of General Condition G15. In addition, the Permittee must sample discharges at the locations specified in the Operational SWPPP (Condition S12.) for the parameters for which this permit establishes effluent limits, estimate the volume of water discharged, and report the data to Ecology.

**S5. APPLICATION FOR PERMIT RENEWAL**

The Permittee must submit an application for renewal of this permit by September 30, 2011.

**S6. SOLID WASTE DISPOSAL**

**A. Solid Waste Handling**

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

**B. Leachate**

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available and reasonable methods of prevention, control, or treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC. The Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters.

**C. Solid Waste Control Plan**

The Permittee must submit a solid waste control plan to Ecology no later than May 1, 2008. This plan must include all solid wastes with the exception of those solid wastes regulated by Chapter 173-303 WAC (Dangerous Waste Regulations). The plan must include at a minimum a description, source, generation rate, and disposal methods of these solid wastes. This plan must not be at variance with any approved local solid waste management plan. Any proposed revision or modification of the solid waste handling plan must be submitted to Ecology. The Permittee must comply with the plan and any modifications thereof. The Permittee must submit an update of the solid waste control plan by September 30, 2011.

## **S7. UPDATES TO ENGINEERING REPORT**

### **A. Engineering Report**

The permittee must prepare an engineering report for proposed modifications to the existing facility for Ecology's review and approval. The permittee must submit the engineering report no later than 120 days prior to the modifications.

### **B. Plans and Specifications**

No later than 60 days after the approval date of the engineering report, the Permittee must submit two copies of approvable plans and specifications in accordance with Chapter 173-240 WAC to Ecology for review and approval.

### **C. Treated Mine Water and Stockpile Storm Water Monitoring Schedule**

1. By December 1, 2007, the Permittee must submit, for Ecology's review and approval, a scope of work for an engineering report that analyzes water quality data from the treatment plant influent and effluent. The engineering report must develop a treatment plant operational water quality monitoring plan for indicator parameters in the effluent from each ion exchange column. The engineering report must identify ion exchange column bed volume maxima for those regulated or unregulated parameters that are the first indicators of breakthrough from the ion exchange columns. The Treatment Plant Operational Monitoring Plan must establish a sampling schedule for the indicator parameters that ensures that discharges from the treatment plant meet the effluent limits in Condition S1.A. The approved Treatment Plant Operational Monitoring Plan must be included in the Operations and Maintenance manual, Condition S4.
2. Within 90 days of treatment plant startup, the Permittee must prepare and submit, for Ecology's review and approval, the treatment plant engineering report and operational monitoring plan.

## **S8. NON-ROUTINE AND UNANTICIPATED DISCHARGES**

- A. Beginning on October 1, 2007, the Permittee may discharge non-routine wastewater on a case-by-case basis, if approved by Ecology. Ten days prior to any such discharge, the Permittee must contact Ecology and at a minimum provide the following information:
  1. The nature of the activity that is generating the discharge.
  2. Any alternatives to the discharge, such as reuse, storage, or recycling of the water.
  3. The total volume of water expected to be discharged.



4. The results of the chemical analysis of the water. The water must be analyzed for all constituents limited for the Permittee's discharge. The analysis must also include hardness, any metals that are limited by water quality standards, and any other parameter deemed necessary by Ecology. All discharges must comply with the effluent limitations as established in Condition S1 of this permit, water quality standards, sediment management standards, and any other limitations imposed by Ecology.
  5. The discharge rate must be limited to that which will not cause erosion of ditches or structural damage to culverts and their entrances or exits.
- B. The discharge must not proceed until Ecology has reviewed the information provided and has authorized the discharge. Authorization from Ecology will be by letter to the Permittee or by an Administrative Order.

#### S9. SPILL PLAN

By December 1, 2007, the Permittee must submit to Ecology a spill control plan for the prevention, containment, and control of spills or unplanned discharges of: (1) oil and petroleum products; (2) materials, which when spilled, or otherwise released into the environment, are designated Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070; or (3) other materials which may become pollutants or cause pollution upon reaching state's waters. The Permittee must review and update the Spill Plan at least annually. Changes to the plan must be sent to Ecology. The plan and any supplements must be followed throughout the term of the permit.

The updated spill control plan must include the following:

- A description of the reporting system which will be used to alert responsible managers and legal authorities in the event of a spill.
- A description of preventive measures and facilities (including an overall facility plot showing drainage patterns) which prevent, contain, or treat spills of these materials.
- A list of all oil and chemicals used, processed, or stored at the facility which may be spilled into state waters.

For the purpose of meeting this requirement, plans and manuals, or portions thereof, required by 33 CFR 154, 40 CFR 109, 40 CFR 110, 40 CFR Part 112, the Federal Oil Pollution Act of 1990, Chapter 173-181, and contingency plans required by Chapter 173-303 WAC may be submitted.

**S10. ACUTE TOXICITY****A. Effluent Characterization**

The Permittee must conduct acute toxicity testing on the effluent from the treatment plant to determine the presence and amount of acute (lethal) toxicity. The two acute toxicity tests listed below must be conducted on each sample taken for effluent characterization.

Effluent characterization for acute toxicity must be conducted during May and September 2009 and May and September 2010. Characterization data must be submitted to Ecology within 60 days after each sampling event. The Permittee must submit an Acute Toxicity Characterization Summary Report to Ecology by December 15, 2009, and December 15, 2010. The summary report must include a tabulated summary of the individual test results and any information on sources of toxicity, toxicity source control, correlation with effluent data, and toxicity treatability which is developed during the period of testing.

Acute toxicity testing must follow protocols, monitoring requirements, and quality assurance/quality control procedures specified in this section. A dilution series consisting of a minimum of five concentrations and a control must be used to estimate the concentration lethal to 50% of the organisms (LC50). The percent survival in 100% effluent must also be reported.

Acute toxicity tests must be conducted with the following species and protocols:

Freshwater Acute Test	Species	Method
Fathead minnow survival and growth	Pimephales promelas	EPA-821-R-02-012
Water flea survival and reproduction	Ceriodaphnia dubia, Daphnia pulex, or Daphnia magna	EPA-821-R-02-012

**B. Effluent Limit for Acute Toxicity**

The Permittee must have an effluent limit for acute toxicity if, after completing the effluent characterization, either:

1. The median survival of any species in 100% effluent is below 80%.
2. Any one test of any species exhibits less than 65% survival in 100% effluent.

If an effluent limit for acute toxicity is required by subsection B at the end of effluent characterization, the Permittee must immediately complete all applicable requirements in subsections C, D, and F.

If no effluent limit is required by subsection B at the end of effluent characterization, then the Permittee must complete all applicable requirements in subsections E and F.

The effluent limit for acute toxicity is no acute toxicity detected in the acute critical effluent concentration (ACEC). The ACEC equals 100% effluent.

In the event of failure to pass the test described in subsection C. of this section for compliance with the effluent limit for acute toxicity, the Permittee is considered to be in compliance with all permit requirements for acute whole effluent toxicity as long as the requirements in subsection D. are being met to the satisfaction of Ecology.

**C. Monitoring for Compliance With an Effluent Limit for Acute Toxicity**

Monitoring to determine compliance with the effluent limit must be conducted biannually, May and September, for the remainder of the permit term using each of the species listed in subsection A on a rotating basis and performed using at a minimum five effluent concentrations and a control. One of these five test concentrations must be the ACEC of 100% effluent. The Permittee must schedule the toxicity tests in the order listed in the permit unless Ecology notifies the Permittee in writing of another species rotation schedule.

Compliance with the effluent limit for acute toxicity means no statistically significant difference in survival between the control and the test concentration representing the ACEC. The Permittee must immediately implement subsection D, if any acute toxicity test conducted for compliance monitoring determines a statistically significant difference in survival between the control and the ACEC using hypothesis testing at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10%, the hypothesis test must be conducted at the 0.01 level of significance.

**D. Response to Noncompliance With an Effluent Limit for Acute Toxicity**

If the Permittee violates the acute toxicity limit in subsection B, the Permittee must begin additional compliance monitoring within one week from the time of receiving the test results. This additional monitoring must be conducted weekly for four consecutive weeks using the same test and species as the failed compliance test. If there is no discharge to sample during any of these weeks, testing must be conducted on the next discharge event. Testing must determine the LC50 and effluent limit compliance. The discharger must return to the original monitoring frequency in subsection C after completion of the additional compliance monitoring.

If the Permittee believes that a test indicating noncompliance will be identified by Ecology as an anomalous test result, the Permittee may notify Ecology that the compliance test result might be anomalous and that the Permittee intends to take only one additional sample for toxicity testing and wait for notification from Ecology before completing the additional monitoring required in this subsection. The notification to Ecology must accompany the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous. The Permittee must complete all of the additional monitoring required in this subsection as soon as possible after notification by

Ecology that the compliance test result was not anomalous. If the one additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee must proceed without delay to complete all of the additional monitoring required in this subsection. The one additional test result must replace the compliance test result upon determination by Ecology that the compliance test result was anomalous.

If all of the additional compliance monitoring conducted in accordance with this subsection complies with the permit limit, the Permittee must search all pertinent and recent facility records (operating records, monitoring results, inspection records, spill reports, weather records, production records, raw material purchases, pretreatment records, etc.) and submit a report to Ecology on possible causes and preventive measures for the transient toxicity event which triggered the additional compliance monitoring.

If toxicity occurs in violation of the acute toxicity limit during the additional compliance monitoring, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology. The TI/RE plan submittal must be within 60 days after the sample date for the fourth additional compliance monitoring test. If the Permittee decides to forgo the rest of the additional compliance monitoring tests required in this subsection because one of the first three additional compliance monitoring tests failed to meet the acute toxicity limit, then the Permittee must submit the TI/RE plan within 60 days after the sample date for the first additional monitoring test to violate the acute toxicity limit. The TI/RE plan must be based on WAC 173-205-100(2) and must be implemented in accordance with WAC 173-205-100(3).

**E. Monitoring When There Is No Permit Limit for Acute Toxicity**

The Permittee must test final effluent once in the last May and once in the last September prior to submission of the application for permit renewal. All species used in the initial acute effluent characterization or substitutes approved by Ecology must be used, and results submitted to Ecology as a part of the permit renewal application process.

**F. Sampling and Reporting Requirements**

1. All reports for effluent characterization or compliance monitoring must be submitted in accordance with the most recent version of Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* in regards to format and content. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data on floppy disk for electronic entry into Ecology's database, then the Permittee must send the disk to Ecology along with the test report, bench sheets, and reference toxicant results.

2. Testing must be conducted on grab samples. Samples must be shipped on ice to the lab immediately upon collection. If a sample is received at the testing lab within one hour after collection, it must have a temperature below 20°C at receipt. If a sample is received at the testing lab within 4 hours after collection, it must be below 12°C at receipt. All other samples must be 0 to 6°C at receipt. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was ended. The lab must store all samples at 0 to 6°C in the dark from receipt until completion of the test.
3. All samples and test solutions for toxicity testing must have water quality measurements as specified in Department of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* or most recent version thereof.
4. All toxicity tests must meet quality assurance criteria and test conditions in the most recent versions of the EPA manual listed in subsection A and Department of Ecology Publication WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If test results are determined to be invalid or anomalous by Ecology, testing must be repeated with freshly collected effluent.
5. Control water and dilution water must be laboratory water meeting the requirements of the EPA manual listed in subsection A or pristine natural water of sufficient quality for good control performance.
6. The permittee may sample receiving water at surface water monitoring station SW-7 at the same time as the effluent and instruct the lab to measure the hardness of both and increase the hardness of the effluent sample to match the hardness of the receiving water sample prior to beginning the toxicity test. Otherwise, the toxicity test must be run on an unmodified sample of the effluent.
7. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing and do not comply with the acute statistical power standard of 29% as defined in WAC 173-205-020 must be repeated on a fresh sample with an increased number of replicates to increase the power.

## S11. CHRONIC TOXICITY

### A. Effluent Characterization

The Permittee must conduct chronic toxicity testing on the effluent from the treatment plant. The three chronic toxicity tests listed below must be conducted on each sample taken for effluent characterization.

Effluent characterization for chronic toxicity must be conducted during May and September 2009 and May and September 2010. Characterization data must be submitted to Ecology within 60 days after each sampling event. The Permittee must submit a Chronic Toxicity Characterization Summary Report to Ecology by December 15, 2009 and

December 15, 2010. The summary report must include a tabulated summary of the individual test results and any information on sources of toxicity, toxicity source control, correlation with effluent data, and toxicity treatability which is developed during the period of testing.

The Permittee must conduct chronic toxicity testing during effluent characterization on a series of at least five concentrations of effluent in order to determine appropriate point estimates. This series of dilutions must include the ACEC, or 100% effluent. The Permittee must compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.

Chronic toxicity tests must be conducted with the following three species and the most recent version of the following protocols:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	Pimephales promelas	EPA-821-R-02-013
Water flea survival and reproduction	Ceriodaphnia dubia	EPA-821-R-02-013
Alga	Selenastrum capricornutum	EPA-821-R-02-013

#### B. Effluent Limit for Chronic Toxicity

After completion of effluent characterization, the Permittee has an effluent limit for chronic toxicity if any test conducted under subsection A shows a significant difference between the control and the ACEC at the 0.05 level of significance using hypothesis testing (Appendix H, EPA/600/4-89/001). The Permittee must complete all applicable requirements in subsections C, D, and F upon determining that an effluent limit for chronic toxicity applies to the discharge.

If no significant difference is shown between the ACEC and the control in any of the chronic toxicity tests, the Permittee has no effluent limit for chronic toxicity and only subsections E and F apply.

The effluent limit for chronic toxicity is no toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC). The CCEC equals 100% effluent.

In the event of failure to pass the test described in subsection C. of this section for compliance with the effluent limit for chronic toxicity, the Permittee is considered to be in compliance with all permit requirements for chronic whole effluent toxicity as long as the requirements in subsection D. are being met to the satisfaction of Ecology.

### **C. Monitoring for Compliance With an Effluent Limit for Chronic Toxicity**

Monitoring to determine compliance with the effluent limit must be conducted biannually, May and September, for the remainder of the permit term using each of the species listed in subsection A above on a rotating basis and performed using at a minimum five effluent concentrations and a control. One of these five test concentrations must be the CCEC of 100% effluent. The Permittee must schedule the toxicity tests in the order listed in the permit unless Ecology notifies the Permittee in writing of another species rotation schedule.

Compliance with the effluent limit for chronic toxicity means no statistically significant difference in response between the control and the test concentration representing the CCEC. The Permittee must immediately implement subsection D if any chronic toxicity test conducted for compliance monitoring determines a statistically significant difference in response between the control and the CCEC using hypothesis testing at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in response between the control and the CCEC is less than 20%, the hypothesis test must be conducted at the 0.01 level of significance.

### **D. Response to Noncompliance With an Effluent Limit for Chronic Toxicity**

If a toxicity test conducted for compliance monitoring under subsection C determines a statistically significant difference in response between the CCEC and the control, the Permittee must begin additional compliance monitoring within one week from the time of receiving the test results. This additional monitoring must be conducted monthly for three consecutive months using the same test and species as the failed compliance test. If there is no discharge to sample during any of these months, testing must be conducted on the next discharge event. Testing must be conducted using a series of at least five effluent concentrations and a control in order to be able to determine appropriate point estimates. One of these effluent concentrations must equal the CCEC and be compared statistically to the nontoxic control in order to determine compliance with the effluent limit for chronic toxicity as described in subsection C. The discharger must return to the original monitoring frequency in subsection C after completion of the additional compliance monitoring.

If the Permittee believes that a test indicating noncompliance will be identified by Ecology as an anomalous test result, the Permittee may notify Ecology that the compliance test result might be anomalous and that the Permittee intends to take only one additional sample for toxicity testing and wait for notification from Ecology before completing the additional monitoring required in this subsection. The notification to Ecology must accompany the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous. The Permittee must complete all of the additional monitoring required in this subsection as soon as possible after notification by Ecology that the compliance test result was not anomalous. If the one additional sample fails to comply with the effluent limit for chronic toxicity, then the Permittee must proceed without delay to complete all of the additional monitoring required in this subsection. The one additional test result must replace the compliance test result upon determination by Ecology that the compliance test result was anomalous.

If all of the additional compliance monitoring conducted in accordance with this subsection complies with the permit limit, the Permittee must search all pertinent and recent facility records (operating records, monitoring results, inspection records, spill reports, weather records, production records, raw material purchases, pretreatment records, etc.) and submit a report to Ecology on possible causes and preventive measures for the transient toxicity event which triggered the additional compliance monitoring.

If toxicity occurs in violation of the chronic toxicity limit during the additional compliance monitoring, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology. The TI/RE plan submittal must be within 60 days after the sample date for the third additional compliance monitoring test. If the Permittee decides to forgo the rest of the additional compliance monitoring tests required in this subsection because one of the first two additional compliance monitoring tests failed to meet the chronic toxicity limit, then the Permittee must submit the TI/RE plan within 60 days after the sample date for the first additional monitoring test to violate the chronic toxicity limit. The TI/RE plan must be based on WAC 173-205-100(2) and must be implemented in accordance with WAC 173-205-100(3).

#### **E. Monitoring When There Is No Permit Limit for Chronic Toxicity**

The Permittee must test final effluent once in the last spring and once in the last winter prior to submission of the application for permit renewal. All species used in the initial chronic effluent characterization or substitutes approved by Ecology must be used, and results submitted to Ecology as a part of the permit renewal application process.

#### **F. Sampling and Reporting Requirements**

1. All reports for effluent characterization or compliance monitoring must be submitted in accordance with the most recent version of Department of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* in regards to format and content. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data on floppy disk for electronic entry into Ecology's database, then the Permittee must send the disk to Ecology along with the test report, bench sheets, and reference toxicant results.
2. Testing must be conducted on grab samples. Samples must be shipped on ice to the lab immediately upon collection. If a sample is received at the testing lab within one hour after collection, it must have a temperature below 20° C at receipt. If a sample is received at the testing lab within 4 hours after collection, it must be below 12° C at receipt. All other samples must be 0 - 6° C at receipt. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was ended. The lab must store all samples at 0 - 6° C in the dark from receipt until completion of the test.
3. All samples and test solutions for toxicity testing must have water quality measurements as specified in Department of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* or most recent version thereof.



4. All toxicity tests must meet quality assurance criteria and test conditions in the most recent versions of the EPA manual listed in subsection A. and the Department of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If test results are determined to be invalid or anomalous by Ecology, testing must be repeated with freshly collected effluent.
5. Control water and dilution water must be laboratory water meeting the requirements of the EPA manual listed in subsection A or pristine natural water of sufficient quality for good control performance.
6. The permittee may sample receiving water at surface water monitoring station SW-7 at the same time as the effluent and instruct the lab to measure the hardness of both and increase the hardness of the effluent sample to match the hardness of the receiving water sample prior to beginning the toxicity test. Otherwise, the toxicity test must be run on an unmodified sample of the effluent.
7. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing, and do not comply with the chronic statistical power standard of 39% as defined in WAC 173-205-020, must be repeated on a fresh sample with an increased number of replicates to increase the power.

**S12. MINE SITE OPERATIONAL STORMWATER POLLUTION PREVENTION PLAN  
(OPERATIONAL SWPPP)**

The definitions of terms used in this section are provided in the guidance document entitled *Stormwater Pollution Prevention Planning for Industrial Facilities*, Publication # WQ-R-93-015, 1998, which is published by the Department of Ecology and available on Ecology's website at <http://www.ecy.wa.gov/biblio/wqr93013.html>.

**A. Plan Implementation**

No later than October 1, 2007, the Permittee must implement and comply with all the elements of the approved Operational SWPPP, including operational, treatment and source control BMPs, as well as erosion and sediment control BMPs determined necessary.

**B. General Requirements**

**1. Retention and Availability:**

The Operational SWPPP and all of its modifications must be retained on-site or within reasonable access to the site so that it is available for review by inspectors.

2. Modifications:

The Permittee must modify the Operational SWPPP whenever there is a change in design, construction, operation or maintenance which causes the Operational SWPPP to be less effective in controlling the pollutants. The Operational SWPPP must be modified whenever the description of potential pollutant sources or the pollution prevention measures and controls identified in the Operational SWPPP are inadequate. The proposed modifications to the Operational SWPPP must be submitted to Ecology for review and approval at least 30 days in advance of implementing the proposed changes in the plan unless Ecology approves immediate implementation. The Permittee must provide for implementation of any modifications to the Operational SWPPP in a timely manner.

3. The Permittee may incorporate applicable portions of plans prepared for other purposes. Plans or portions of plans incorporated into an Operational SWPPP become enforceable requirements of this permit.

C. Implementation and Evaluation

The Permittee must evaluate whether measures to reduce pollutant loadings identified in the Operational SWPPP are adequate and properly implemented in accordance with the terms of the permit or whether additional controls are needed. A record must be maintained summarizing the results of inspections and include a certification that the facility is in compliance with the plan and in compliance with this permit. The record must identify any incidents of noncompliance.

The Permittee must conduct two inspections per year — one during the wet season (October 1 - April 30) and the other during the dry season (May 1 - September 30).

1. The wet season inspection must be conducted during a rainfall event by personnel named in the Operational SWPPP to verify that the description of potential pollutant sources required under this permit are accurate; the site map as required in the Operational SWPPP has been updated or otherwise modified to reflect current conditions; and the controls to reduce pollutants in stormwater discharges associated with industrial activity identified in the Operational SWPPP are being implemented and are adequate. The wet weather inspection must include observations of the presence of floating materials, suspended solids, oil and grease, discolorations, turbidity, odor, etc. in the stormwater discharge(s).
2. Personnel named in the Operational SWPPP must conduct the dry season inspection. The dry season inspection must determine the presence of unpermitted non-stormwater discharges such as domestic wastewater, noncontact cooling water, or process wastewater (including leachate) to the stormwater drainage system. If an unpermitted, non-stormwater discharge is discovered, the Permittee must immediately identify the source of the discharge, prepare to eliminate the discharge, and notify Ecology.

**S13. DEVELOPMENT ROCK MANAGEMENT PLAN**

No later than October 1, 2007, the Permittee must manage the development rock stockpiles in strict accordance with the Development Rock Management Plan approved by the Washington Department of Natural Resources and Ecology. The plan may be revised to reflect changes necessary to improve the performance of the stockpiles. Any modifications to the plan must not take effect until reviewed and approved by both departments.

**S14. ADAPTIVE MANAGEMENT PLAN FOR WATER QUALITY**

The Permittee must implement necessary actions identified in the approved Adaptive Management Plan for Water Quality. The management actions may be modified subsequent to the effective date of this permit. Any modifications to the plan must not take effect until reviewed and approved by Ecology.

**S15. HYDROLOGIC MONITORING PLAN**

No later than October 1, 2007, the Permittee must implement the monitoring program in the approved Hydrologic Monitoring Plan. The plan may be modified subsequent to the effective date of this permit. Any modifications to the plan must not take effect until reviewed and approved by Ecology.

**S16. ENVIRONMENTAL PROTECTION PERFORMANCE SECURITY (EPPS)**

The Permittee must maintain adequate performance security for environmental protection (RCW 78.56.110). No later than October 1, 2009, and every 2 years thereafter, the Permittee must determine the adequacy of the EPPS and submit documentation to Ecology for review and approval. If the Permittee makes process or material operational changes that, in Ecology's opinion, may result in a change in costs required to complete the required mitigation, an EPPS review may be performed in less than 2 years. If Ecology determines that additional performance security is required, Ecology will notify the Permittee in writing, including a statement of the amount of the additional performance security. The Permittee must submit the required performance security in a form acceptable to Ecology within 90 days of receipt of the notice.

**S17. FISH AND WILDLIFE MITIGATION AGREEMENT**

The Permittee must implement the fish and wildlife mitigation measures in the "Agreement for Mitigation Between the State of Washington Department of Fish and Wildlife and Crown Resources Corporation", and all documents referenced therein. The mitigation measures must be implemented in accordance with the schedules found in the agreement and the referenced documents. The mitigation measures may be modified subsequent to the effective date of this permit, provided that the modifications are contained in a mitigation plan approved by the Washington Department of Fish and Wildlife.

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Expiration Date: October 31, 2012

Modification Date: June 16, 2009

**S18. BRINE MANAGEMENT PLAN**

No later than January 1, 2008, the Permittee must prepare for Ecology's review and approval a plan that discloses the management and disposal practices for brines and other waste products that are generated as part of the ion exchange treatment process. The plan may be modified subsequent to its approval by Ecology. Any modifications to the plan must not take effect until reviewed and approved by Ecology.

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## GENERAL CONDITIONS

### G1. SIGNATURE AUTHORIZATION/DELEGATION

All applications, reports, or information submitted to Ecology must be signed and certified.

- A. All permit applications must be signed by either a responsible corporate officer of at least the level of vice president of a corporation, a general partner of a partnership, or the proprietor of a sole proprietorship.
- B. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  1. The authorization is made in writing by a person described above and submitted to Ecology.
  2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
- C. Changes to authorization. If an authorization under paragraph B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph B.2 above must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section must make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

### G2. RIGHT OF INSPECTION AND ENTRY

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.

- B. To have access to and copy - at reasonable times and at reasonable cost - any records required to be kept under the terms and conditions of this permit.
- C. To inspect - at reasonable times - any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D. To sample or monitor - at reasonable times - any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

### G3. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon Ecology's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

- A. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
  - 1. Violation of any permit term or condition.
  - 2. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
  - 3. A material change in quantity or type of waste disposal.
  - 4. A determination that the permitted activity endangers human health or the environment or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination [40 CFR part 122.64(3)].
  - 5. A change in any condition that requires either a temporary or permanent reduction or elimination of any discharge or sludge use or disposal practice controlled by the permit [40 CFR part 122.64(4)].
  - 6. Nonpayment of fees assessed pursuant to RCW 90.48.465.
  - 7. Failure or refusal of the permittee to allow entry as required in RCW 90.48.090.
- B. The following are causes for modification but not revocation and reissuance except when the permittee requests or agrees:
  - 1. A material change in the condition of the waters of the state.
  - 2. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
  - 3. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
  - 4. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
  - 5. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
  - 6. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
  - 7. Incorporation of an approved local pretreatment program into a municipality's permit.
- C. The following are causes for modification or alternatively revocation and reissuance:

1. Cause exists for termination for reasons listed in A1 through A7, of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
2. Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G8) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new permittee.

#### **G4. REPORTING PLANNED CHANGES**

The Permittee must, as soon as possible, but no later than 60 days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in: 1) the permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b); 2) a significant change in the nature or an increase in quantity of pollutants discharged; or 3) a significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

#### **G5. PLAN REVIEW REQUIRED**

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with Chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least 180 days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

#### **G6. COMPLIANCE WITH OTHER LAWS AND STATUTES**

Nothing in this permit must be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

#### **G7. TRANSFER OF THIS PERMIT**

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

##### **A. Transfers by Modification**

Except as provided in paragraph B below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

**B. Automatic Transfers**

This permit may be automatically transferred to a new Permittee if:

1. The Permittee notifies Ecology at least 30 days in advance of the proposed transfer date.
2. The notice includes a written agreement between the existing and new Permittee's containing a specific date transfer of permit responsibility, coverage, and liability between them.
3. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under the subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

**G8. REDUCED PRODUCTION FOR COMPLIANCE**

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

**G9. REMOVED SUBSTANCES**

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

**G10. DUTY TO PROVIDE INFORMATION**

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

**G11. OTHER REQUIREMENTS OF 40 CFR**

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

**G12. ADDITIONAL MONITORING**

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

**G13. PAYMENT OF FEES**

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.



**G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS**

Any person who is found guilty of willfully violating the terms and conditions of this permit must be deemed guilty of a crime, and upon conviction thereof must be punished by a fine of up to \$10,000 and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit must incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to \$10,000 for every such violation. Each and every such violation must be a separate and distinct offense, and in case of a continuing violation, every day's continuance must be deemed to be a separate and distinct violation.

**G15. UPSET**

Definition -- "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in condition S3.E; and 4) the Permittee complied with any remedial measures required under S4.C of this permit.

In any enforcement proceedings the Permittee seeking to establish the occurrence of an upset has the burden of proof.

**G16. PROPERTY RIGHTS**

This permit does not convey any property rights of any sort, or any exclusive privilege.

**G17. DUTY TO COMPLY**

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

**G18. TOXIC POLLUTANTS**

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

**G19. PENALTIES FOR TAMPERING**

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit must, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this Condition, punishment must be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or by both.

**G20. REPORTING ANTICIPATED NON-COMPLIANCE**

The Permittee must give advance notice to Ecology by submission of a new application or supplement thereto at least 180 days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, must be scheduled during non-critical water quality periods and carried out in a manner approved by Ecology.

**G21. REPORTING OTHER INFORMATION**

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to Ecology, it must promptly submit such facts or information.

**G22. REPORTING REQUIREMENTS APPLICABLE TO EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL DISCHARGERS**

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify Ecology as soon as they know or have reason to believe:

- A. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
  - 1. One hundred micrograms per liter (100 µg/L).
  - 2. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
  - 3. Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).

4. The level established by the Director in accordance with 40 CFR 122.44(f).
- B. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
1. Five hundred micrograms per liter (500µg/L).
  2. One milligram per liter (1 mg/L) for antimony.
  3. Ten times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  4. The level established by the Director in accordance with 40 CFR 122.44(f).

**G23. COMPLIANCE SCHEDULES**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

# **Attachment 2**

(Case No. 351998)

POLLUTION CONTROL HEARINGS BOARD  
FOR THE STATE OF WASHINGTON

CROWN RESOURCES CORPORATION,

Appellant,

v.

WASHINGTON DEPARTMENT OF  
ECOLOGY,

Respondent.

PCHB No. 12-084

SETTLEMENT AGREEMENT AND  
CONSENT ORDER

I. INTRODUCTION

This is a Stipulation and Agreed Order ("Agreement") between Crown Resources Corporation ("Crown") and the Washington State Department of Ecology ("Ecology"), each of whom is a "Party" and together are the "Parties" to this Agreement. This Agreement provides for the settlement of existing issues involving the Parties concerning the Buckhorn Mountain Mine Site ("Buckhorn Site"), including alleged permit violations, and constitutes an Agreed Order under RCW 90.48.120.

By entering into this Agreement, the parties are settling, *Crown Resources Corporation v. Department of Ecology*, PCHB No. 12-084, Crown's appeal of a \$395,000 penalty issued by Ecology for alleged violations of Crown's NPDES permit and RCW 90.48 at the Buckhorn Site ("PCHB Appeal"). In addition, by entering into this Agreement, the Parties agree to several additional binding commitments, including: (1) the process and schedule for issuance of the new NPDES Permit No. WA0052434 ("NPDES Permit Issuance"); (2) an agreement by Crown to reimburse Ecology for the costs of dedicating one full-time and one part-time employee to

1 oversee ongoing permitting and compliance efforts at the Buckhorn Mine pursuant to a cost  
2 reimbursement agreement ("Cost Reimbursement Agreement"); (3) a schedule of compliance to  
3 be instituted in order to permit Crown to bring the Buckhorn Site into compliance in a timely  
4 manner under its current NPDES Permit; and (4) delineation of a dispute resolution process to  
5 serve as a tool for resolving disputes that may arise in the implementation of this Agreement or in  
6 connection with the new NPDES Permit.

7 II. PCHB APPEAL NO. 12-084

8 A. This Agreement resolves all issues and claims by all Parties in *Crown Resources*  
9 *Corporation v. Department of Ecology*, PCHB No. 12-084, currently pending before the PCHB  
10 and, provided Crown complies with Sections II(C)(1) and (2) of this Agreement, such compliance  
11 satisfies and releases Crown and its parents, subsidiaries and affiliated companies from any and  
12 all liability under Penalty No. 9245 and matters within the scope of this proceeding.

13 B. Within seven (7) days of execution of this Agreement, the Parties agree to file it with  
14 the PCHB and to ask that the appeal be dismissed consistent with its terms.

15 C. Ecology agrees that, in lieu of paying the \$395,000 penalty for alleged NPDES permit  
16 non-compliance, Crown shall:

- 17 1. Pay \$80,000 penalty to Ecology upon execution of this Agreement, and
- 18 2. Pay \$180,000 to fund supplemental environmental remediation projects within  
19 the vicinity of the Buckhorn Site. Crown and Ecology will jointly determine a schedule of  
20 projects, based on both Parties' environmental priorities, by September 1, 2013. Projects  
21 implemented from September 1, 2013 to September 1, 2016 are eligible for funding. Parties  
22 agree to discuss fulfillment of this schedule during regularly scheduled management level  
23 meetings detailed in Section V.A of this Agreement and work together in good faith to identify  
24 appropriate expenditures. Any disputes related to supplemental environmental projects are  
25 subject to Section V of this Agreement, the Dispute Resolution Process. In the event sufficient  
26 projects cannot be identified or funded by September 1, 2016, or in the event of a dispute between

27

1 the parties that cannot be resolved pertaining to supplemental environmental projects, Crown will  
2 pay any balance remaining of the above specified amount to Ecology as a penalty.

### 3 4 III. NEW NPDES PERMIT ISSUANCE TIMELINE

5 A. The following table summarizes the anticipated timeline for issuance of a new NPDES  
6 permit, subject to the diligent efforts of both parties and required public reviews. The parties  
7 shall use their best efforts to meet this timeline, but noncompliance with a particular deadline  
8 does not constitute a breach of this Agreement. Ecology retains authority at all times to issue a  
9 new permit pursuant to applicable law.

Date	Deliverable	Party
07/03/2013	Crown and Ecology file motions to dismiss and settle PCHB case.	Crown/Ecology
07/03/2013	Initiation of three-year Cost Reimbursement Agreement period, including providing first quarterly payment to state General Fund	Crown
07/10/2013	Crown submits remaining deliverables needed for drafting the new NPDES permit	Crown
07/24/2013	Ecology transmits revised draft NPDES permit to Crown for review incorporating previous meeting suggestions and written comments.	Ecology
08/09/2013	Crown returns comments on internal draft NPDES Permit	Crown
08/23/2013	Ecology releases draft NPDES Permit for Public Comment Period	Ecology
09/23/2013	End of Public Comment Period, Ecology incorporates public comments.	Ecology
09/30/2013	Ecology and Crown meet to discuss final permit language	Crown/Ecology
11/01/2013	New NPDES Permit issued by Ecology	Ecology

### 21 22 IV. COST REIMBURSEMENT AGREEMENT ("CRA")

23 A. Parties agree that the Buckhorn Site has resulted in significant costs and staff demands  
24 for Ecology.

25 B. Ecology and Crown agree that adequate supervision of the Buckhorn Site and  
26 implementation of, and compliance with this Agreement, the current NPDES Permit and  
27 development and implementation of the new permit will require one (1) full-time Ecology

1 employee and one part-time Ecology employee to oversee permitting, compliance and  
2 correspondence with Crown, as well as other state and federal agencies.

3 C. Parties shall execute a Cost Reimbursement Agreement reflecting the goals of this  
4 Settlement Agreement within a reasonable time after the execution of this Settlement Agreement,  
5 in order to permit Ecology to continue its monitoring and oversight activities at Buckhorn Mine.  
6 Parties agree that time is of the essence in executing such Cost Reimbursement Agreement.

7 D. Under the Cost Reimbursement Agreement, Crown will pay a total of \$588,888.06 to  
8 fund the estimated cost of one full-time Ecology employee and one part-time Ecology employee  
9 for three (3) years covering June 1, 2013 through May 31, 2016. Crown shall pay the State of  
10 Washington \$49,074.00 per quarter, with the first quarterly payment arriving to the State's  
11 general fund ("General Fund") by July 12, 2013, and subsequent payments due by September 1,  
12 December 1, March 1, and June 1 until the exhaustion of the funds allocated for the purposes in  
13 paragraph IV.B above.

14 E. Crown further agrees to pay all reasonable and necessary lab costs associated with  
15 Ecology water quality sampling in an amount of up to \$50,000 per year during the three year  
16 period.

17

18 **V. COMMUNICATION AND DISPUTE RESOLUTION PROCESS**

19 A. From the effective date of this agreement until active mining operations cease at the  
20 current Buckhorn mine site, project management representatives of Ecology and Crown shall  
21 meet at least once each month in person or via telephone to discuss progress and to communicate  
22 any issues regarding: NDPES Permit Renewal; subsequent compliance with the renewed NPDES  
23 Permit; compliance with 2013 Discharge Provisions; compliance with this Agreement, including  
24 status of penalty payment; and other issues that may arise between the Parties related to the  
25 Buckhorn Site, including but not limited to Crown's compliance with the NPDES Permit,  
26 Ecology's monitoring of the Buckhorn Site, or the Parties' timeliness in meeting administrative  
27 and regulatory deadlines.



1 B. Both Parties commit to timely acknowledging submittals to and from one another's  
2 representatives, and providing timely responses. To facilitate communication and improve  
3 turnaround time, Ecology will maintain the following model reciprocal review protocol:  
4 1. Within one week of a submittal by Crown of a deliverable document, Ecology  
5 will provide a letter acknowledging receipt thereof and describing a timeline for review.  
6 2. If Ecology subsequently believes it will not meet its self-imposed timeline,  
7 Ecology will provide written notice to Crown describing a revised timeline for response to  
8 Crown's submittal.  
9 C. Ecology retains full authority to evaluate permit compliance and compliance with this  
10 Settlement Agreement and Agreed Order and to issue enforcement orders at any time pursuant to  
11 Ch. 90.48 RCW without regard to the dispute resolution process listed below. However, the  
12 Parties recognize the potential for more efficiently resolving issues through cooperation and set  
13 out the following dispute resolution process as a tool to facilitate resolving future disputes:  
14 1. Issue identification and discussion should begin at the primary point of contact  
15 level between Ecology employees and Crown employees engaged in the day-to-day mine  
16 operations at the Buckhorn Site. Ecology's primary point of contact is the Water Quality  
17 Industrial Unit Supervisor, currently Sanjay Barik. Crown's primary point of contact is  
18 the site Environmental Manager, currently Gina Myers.  
19 2. If, after a good faith effort, resolution of a technical or policy issue cannot be  
20 reached among the primary points of contact, Parties should elevate the discussion of that  
21 particular issue to the site management level. Ecology's site management level  
22 representative is the Water Quality Section Manager, currently Charlie McKinney.  
23 Crown's site management level representative is the Mine General Manager, currently  
24 Mark Ioli.  
25 3. If, after a good faith effort, site management level employees are unable to  
26 resolve the dispute, Parties should elevate the issue to each Party's executive management  
27 staff. Ecology's executive management representative is the Water Quality Program

1 Manager, currently Kelly Susewind. Crown's executive management representative is its  
2 Vice President and General Counsel, currently Nathan Longenecker.

3 4. Under any form of Dispute Resolution, Ecology will maintain its decision-  
4 making authority, explicitly granted by the Washington Legislature. Crown  
5 acknowledges Ecology's authority and agrees that any Dispute Resolution will not  
6 infringe on such authority.

7  
8 **VI. WATER QUALITY PROTECTION PROGRAM**

9 A. With Ecology's oversight, Crown has taken steps to protect water quality and comply  
10 with the current NPDES permit by capturing, treating, and discharging water that enters the mine  
11 workings or otherwise comes into contact with industrial rock on Crown's property. Such  
12 measures include but are not limited to:

- 13 1. Cement lining of water management sumps;
- 14 2. Increased well pump capacities in dewatering wells D-1, D-2, D-3 and D-8;
- 15 3. Deepening of well DW-3 to optimize pumping and capture zone capability;
- 16 4. Routing stormwater and snowmelt originating above mine impacted area away  
17 from potential contaminant source areas to the SSW-7 stormwater pond;
- 18 5. Installation of an interception trench to control potentially impacted shallow  
19 seepage below the PAG pile in order to minimize or prevent poor quality water from  
20 reaching Gold Bowl Creek upstream of JJ-21;
- 21 6. Removal of snow and contained water through haulage of surface piles to the  
22 underground workings;
- 23 7. Installation of permanent infrastructure to allow for Mobile Treatment Capacity.  
24 Treatment units provide additional treatment and discharge capacity in addition to  
25 recycling treated water back into the mine pool when capacity exceeds Crown's ability to  
26 discharge;

- 1           8. Installation of interception trench below surge pond area to capture interflows  
2       discovered in 2012;
- 3           9. Interflow well IW-12 installation to collect shallow water near surge pond;
- 4           10. Installation of HDPE liner beneath accessible portions of PAG pile to prevent  
5       infiltration of contact meteoric waters;
- 6           11. Selected grouting of fault structures and surface drill holes within mine  
7       workings to reduce inflows;
- 8           12. HDPE lining of stormwater pond DA-10;
- 9           13. Geophysical surveys conducted to identify potential areas requiring additional  
10      investigation, including but not limited to piping and stormwater conveyance structures;
- 11          14. Removal of suspect construction rock fill that may have been contributing to  
12      poor interflow water quality;
- 13          15. Routing storm water conveyances to discharge to the water treatment facility;  
14      and
- 15          16. Other source control measures, such as silt fencing, sediment control barriers,  
16      and stormwater drains intended to limit the quantity of water coming in contact with  
17      industrial rock.
- 18      B. Crown will undertake additional water quality protection and permit compliance  
19      activities in the 2013 and 2014 calendar years, including but not limited to:
- 20          1. Initiation of a comprehensive stormwater assessment to identify and  
21      characterize water quality for the Buckhorn mine area, which is expected to inform Crown  
22      on the most appropriate activities for capturing and controlling stormwater that would  
23      otherwise have the potential to adversely affect water quality (began January 2013);
- 24          2. Implementation of capital improvements that will address stormwater source  
25      control, which it considers the principle means of ensuring ongoing environmental  
26      compliance. Crown's planned activities and their anticipated timelines include:
- 27

- 1 a. Continued installation of liner beneath the Buckhorn Mountain Site  
2 PAG pile, initiated by Crown in 2012 (majority of remaining area to be completed  
3 before 2014 Spring Freshet and remainder to be completed by end of 2015);
- 4 b. Secondary lining of surge pond (target completion by October 2013  
5 depending on mine water inundation) and lining of other areas, as appropriate, as  
6 identified in the Stormwater Best Management Practice Improvements Plan  
7 (Golder).
- 8 c. Continued investigation and removal of potentially suspect construction  
9 fill material as identified by Crown to minimize potential sources of interflow  
10 contamination (ongoing);
- 11 d. Evaluating, in consultation with Ecology, potential use of additional  
12 shotcrete and other pH control activities in connection with Crown's  
13 Development Rock Management Plan.
- 14 e. Continued grouting of high-flow areas in the underground mine  
15 workings as appropriate (ongoing during 2013-2014 calendar years);
- 16 f. Continuation of geophysical survey mapping, initiated in October 2012,  
17 to identify potential areas of concern during spring runoff (ongoing);
- 18 g. Investigation of stormwater conveyance network to insure segregation  
19 of industrial and non-industrial stormwater (ongoing); and
- 20 h. Installation of additional piezometers, shallow interflow wells, cut-off  
21 trenches, and other containment and collections systems as appropriate and as  
22 identified through the above investigations, with particular focus on the area above  
23 Gold Bowl Creek where seepage was noted in 2012 and 2013 (ongoing in 2013-  
24 2014). Installation of additional monitoring wells or piezometers, and use of tracer  
25 studies where needed to better understand flow pathways.
- 26 i. Increase dewatering wells and/or pumping capacity as needed, as outfall  
27 capacity becomes available.

1 C. Under the existing NPDES Permit, Crown may institute adaptive management  
2 strategies to address changing site conditions. Ecology agrees to include adaptive management  
3 provisions in the new NPDES Permit in order to allow Crown to continue to take preventive  
4 measures in reaction to changing site conditions.

5 D. The Parties agree to the following Schedule of Compliance, which will permit Crown  
6 to achieve compliance with the existing NPDES Permit conditions and requirements of Ch. 90.48  
7 RCW in a timely manner.

8 1. Turbidity at Haul Road:

9 a. Ecology issued a Notice of Violation to Crown on May 2, 2013 for  
10 discharge of turbid water from a culvert underneath the Haul Road.

11 b. This haul road represents a challenge for water quality protection due  
12 largely to its close proximity to Marias Creek combined with heavy truck traffic.  
13 Crown has put a number of improvements in place to reduce sediment production  
14 from running surfaces and cut-slopes, and turbidity discharges to the creek.  
15 Ecology believes there is still room for improvement as evidenced by the  
16 discharge documented by Ecology on March 20, 2013 and that the best approach  
17 for achieving full compliance with water quality requirements is for Crown to  
18 engage in a comprehensive evaluation and planning process with the U.S. Forest  
19 Service that will lead to solutions for the remaining problem areas on the road.  
20 Ecology understands that a field tour to inspect and discuss the road will be held  
21 on July 2, 2013 between Crown and the USFS. In the interest of problem solving,  
22 efficiency and consistency for all parties, Ecology (stormwater/non-point staff)  
23 will be included in that tour and discussion. If Crown agrees in good faith to  
24 addressing the remaining problem areas on the road, the Parties agree that no  
25 further enforcement action is necessary on the incident that led to NOV 9901.

26 2. Arsenic Exceedance in March DMR

27

1 a. Crown reported an elevated arsenic sample in its March 2013 DMR for  
2 effluent at the Water Treatment Plant.

3 b. Crown reported the event as required on the DMR and initiated sample  
4 verification and source investigation. Crown subsequently provided a detailed  
5 description of these activities to Ecology. In summary, the sample was corrupted  
6 by residual arsenic in storage tank during an atypical startup procedure. The  
7 sample was not representative of effluent discharge for the month. Future startup  
8 procedures will follow established protocols and the event is not expected to  
9 reoccur. The Parties agree that no enforcement action is necessary for this  
10 discharge.

11 3. MW 16

12 a. Ecology has verbally stated in the past that exceedances at MW 16  
13 could be of concern.

14 b. The Parties agree that MW 16 is inside the capture zone and is not a  
15 compliance point for the existing or new NPDES permit. The Parties agree that no  
16 enforcement action is necessary to address these alleged exceedances.

17 E. The parties agree that the water quality protection activities and management  
18 responses identified above, if fully and adequately implemented, justify Ecology in placing a  
19 compliance schedule and interim effluent limits in the new permit. However, the limits in the  
20 new permit will be performance based; Crown must implement the activities necessary to meet all  
21 future limits and schedules established in the new permit. With respect to known violations that  
22 occurred before execution of this Agreement, Ecology agrees that compliance with this  
23 Settlement Agreement constitutes an appropriate and reasonable response, and provided that  
24 Crown implements the above actions as agreed, Ecology will not undertake additional  
25 enforcement actions against Crown for known violations that occurred before execution of this  
26 Agreement.

27

1 F. The Parties anticipate that the new NPDES Permit will include more stringent effluent  
2 limits, capture zone standards and discharge requirements, and that these new standards,  
3 particularly background based groundwater standards, have the potential to put Crown into  
4 immediate noncompliance when the new permit is issued. The parties agree that the new NPDES  
5 permit will contain interim compliance levels and a timeframe in which to bring the Buckhorn  
6 Mountain Site into compliance with these new permit terms. If interim limits in the new permit  
7 are exceeded, Ecology will exercise its enforcement discretion in responding, taking into  
8 consideration Crown's performance in implementing pollution control measure, evidence of data  
9 trends showing declining or increasing concentrations in groundwater, and Crown's compliance  
10 with all other terms of this Agreement.

11 G. If Ecology identifies new instances of noncompliance with the current or new NPDES  
12 permit, or with Ch. 90.48 RCW, it shall first attempt to achieve compliance through open  
13 communication, voluntary measures and technical assistance.

14 **VII. OTHER PROVISIONS**

15 A. The Parties do not intend this Agreement to be an admission of any factual or legal  
16 issue except as expressly provided herein. Nothing in this Agreement is intended to create a  
17 cause of action nor any other rights for any third party not a signatory to this Agreement, nor is  
18 any such party be intended to be a third party beneficiary of this Agreement.

19 B. This Agreement and its exhibits comprise the entire Agreement among the Parties with  
20 respect to the subject matter of this Agreement. It does not invalidate prior agreements,  
21 obligations, or rights among or between any of the Parties except as expressly provided in this  
22 Agreement. No amendment, modification, or waiver of any provision of this Agreement, or  
23 subsequent agreements, which the Parties have agreed to or negotiated concerning this  
24 Agreement, shall go into effect unless set forth in an amendment to this Agreement or by separate  
25 written instrument signed hereafter by the Parties to be bound thereby.

26 C. Nothing herein shall be construed to limit Crown's right to appeal orders, decisions,  
27 determinations, findings or enforcement actions of Ecology post-dating this Agreement, including

1 but not limited to future NOVs, compliance orders, or permitting decisions made by Ecology or  
2 any other agency in connection with the Buckhorn Mine Site.

3 D. This Agreement shall go into effect upon execution by Parties.

4 E. This Agreement may be signed in counterparts. Each signed counterpart shall be  
5 deemed an original, and all counterparts together shall constitute one and the same agreement.

6  
7 DATED this 29<sup>th</sup> day of June, 2013.

8  
9 Crown Resources Corporation

Washington State Department of Ecology

10

11

12 By:

13 Its:

14

15 Crown Resources Corporation

16

17

18 By:

19 Its:

20

21

22

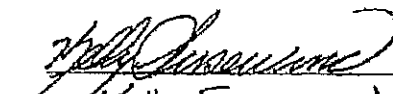
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25

26

27

  
By: Kelly Susewind  
Its: WATER QUALITY  
Program MANAGER



1 but not limited to future NOV's, compliance orders, or permitting decisions made by Ecology or  
2 any other agency in connection with the Buckhorn Mine Site.

3 D. This Agreement shall go into effect upon execution by Parties.

4 E. This Agreement may be signed in counterparts. Each signed counterpart shall be  
5 deemed an original, and all counterparts together shall constitute one and the same agreement.

6  
7 DATED this 28<sup>th</sup> day of June, 2013.

8  
9 Crown Resources Corporation

Washington State Department of Ecology


10  
11 \_\_\_\_\_  
12 By:

By:

13 Its:

Its:

14  
15 Crown Resources Corporation

16  
17   
18 By: James K. Fowler

19 Its: President

# **Attachment 3**

(Case No. 351998)

Page 1 of 116  
Permit No. WA0052434

Issuance Date: February 27, 2014  
Effective Date: March 1, 2014  
Expiration Date: February 28, 2019

First Modification Date: April 29, 2014  
Second Modification Date: April 1, 2015

**National Pollutant Discharge Elimination System  
Waste Discharge Permit No. WA0052434**

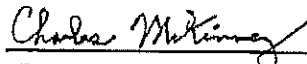
State of Washington  
DEPARTMENT OF ECOLOGY  
Olympia, Washington 98504-7600  
Central Regional Office  
15 West Yakima Avenue, Suite 200  
Yakima, WA 98902

In compliance with the provisions of  
The State of Washington Water Pollution Control Law  
Chapter 90.48 Revised Code of Washington  
and  
The Federal Water Pollution Control Act  
(The Clean Water Act)  
Title 33 United States Code, Section 1342 et seq.

**CROWN RESOURCES CORPORATION**  
363 FISH HATCHERY ROAD  
REPUBLIC, WA 99166

is authorized to discharge in accordance with the Special and General Conditions that follow.

<u>MWTP Facility Location:</u>  Approximately 3.5 miles east of Chesaw, WA Latitude: 48.94581 Longitude: -118.98467	<u>Receiving Water: Effluent discharge to surface water</u> Outfall 002 Gold Bowl Creek Outfall 003 South Fork Nicholson Creek (Roosevelt Adit) Outfall 004 Marias Creek (Stock Trough) Outfall 005 Lower Marias Creek (Temporary 2-year Haul Contingency for the spring freshet of 2017) Outfall 012 Emergency Outfall South Fork Nicholson Creek for the spring freshet of 2017
<u>Industry Type:</u> Underground Gold Mining	<u>Receiving Water: Effluent discharge to ground water</u> Outfall 006 South Fork Bolster Creek (Infiltration System)
SIC Code: 1041 NAICS Code: 212221	<u>Receiving Water: Non-industrial stormwater discharge to ground</u> Outfall 002d D4, DA10, and DA11 Pond & Infiltration Trench

  
Charles McKinney, Section Manager  
Water Quality Program  
Central Regional Office  
Washington State Department of Ecology

000001109

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## Summary of Permit Report Submittals

Refer to the Special and General Conditions of this permit for additional submittal requirements. The following table is for quick reference only. Enforceable submittal requirements are contained in the permit narrative.

Permit Section	Submittal	Frequency	First Submittal Date
S2.B	QAPP	As Necessary	April 1, 2014
S3.A	Reporting - Discharge Monitoring Report	Monthly	April 15, 2014
S3.A	Fully Implement WQWebDMR	Monthly	Within 6 months of the issuance of this permit
S3.D	Reporting Permit Violations	As necessary	
S3.E.b	Annual Meeting Reports – 2 Bound Hard Color Copies & 1 electronic pdf copy	Annually	Minimum of 2 weeks prior to annual meeting date
S3.G	Notification of Mine Closure	As necessary	90 days prior to closure
S4.A.1	MWTP Operations and Maintenance Manual Review	Annually	September 1, 2014
S4.A.4	PAG and Development Rock Liner Installation Plan Submittal	As necessary	April 1, 2014
S4.B	Reporting Bypasses	As necessary	
S5.B	Solid Waste Control Plan – Leachate	As necessary	
S5.C	Solid Waste Control Plan	As necessary	September 1, 2014
S6.	Adaptive Management Plan	As necessary	July 1, 2014
S7.	Development Rock Management Plan	Annually	2 weeks prior to annual meeting date
S8.	Application for Permit Renewal or Modifications of Facility	1/permit cycle	February 28, 2018
S9.	Facility Loading	As necessary	
S10.	Engineering Documents	As necessary	
S11.	Compliance Schedule	As necessary	
S12.	Non-Routine and Unanticipated Discharges	As necessary	
S13.A.1.	Spill Control Plan	1/permit cycle, updates submitted as necessary	July 1, 2014
S14.A.	Stormwater Pollution Prevention Plan	As necessary	April 1, 2014
S15.	Outfall Evaluation	April 30, August 30	April 30, 2014
S16.	Hydrologic Monitoring Plan	Annually/ as needed	July 1, 2014
S17.A.	Acute Toxicity: Characterization Written Report	Quarterly for one year	April 30, 2014
S17.D.2.	Compliance Testing for Acute Toxicity	Quarterly for one year	April 30, 2014
S17.E	Acute Toxicity: Response to noncompliance reporting	As necessary	
S18.A.1	Chronic Toxicity: Characterization Written Report	Quarterly for one year	April 30, 2014

## Special Conditions

### S1. Discharge Limits

#### S1.A.1. Mine Water Discharge Definitions and Narrative Limits

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

1. Discharges from outfalls must not cause erosion or create slope instability.
2. No mixing zone is permitted for any effluent discharge.
3. All Latitudes and Longitudes are required to be reported to Ecology in North American Datum (NAD) 83, in decimal degrees to 5 decimal places for each future (within 30 days following installation) well, piezometer, outfall, stormwater pond, trench and water monitoring locations.
4. Spring Freshet - Spring Freshet is defined in this permit as beginning no earlier than March 15 each spring season in which 0.5 inch of snow water content is released from the snow pack in a 24 hour period as measured and monitored by Natural Resource Conservation Service (NRCS) SNOTEL Site Number 1159, Gold Axe Camp and ending 30 days after the last recorded snow presence at the SNOTEL station (WTEQ.I-1).  
<http://www.wcc.nrcs.usda.gov/nwcc/site?sitenum=1159&state=wa>
5. Any emergency discharge at Outfall 012 will require Permittee to submit a detailed construction, operations, and monitoring plan for development and use of the outfall that would be subject to Ecology approval as the NPDES permit administrator, with concurrence from the US Forest Service as the land management agency responsible for affected National Forest System lands. An emergency declaration will be available through 2017 spring freshet.
6. Any use of emergency Outfall 012 would be restricted to the spring freshet time period as defined in S1.A.1.4. Permittee must show written documentation to demonstrate the need for an emergency declaration by documenting the following:
  - The Mine pool in the Gold Bowl adit reaches an elevation of 4875 feet above sea level; or
  - Water Quality at any monitoring station outside the Capture Zone as defined in Capture Zone Map, Appendix B of the permit, exceeds any one of the following signature parameters from Tables 5, 6 or 7 of the permit:
    - TDS
    - Sulfate
    - Specific Conductance
    - Nitrate



- And Permittee has utilized approved Outfalls 002, 003, 004, and 006 to the maximum discharge allowed in this NPDES Permit.
  - And Outfall 005 has been utilized by hauling effluent to the bottom of the mine haul road to the maximum flow allowed in this NPDES Permit.
7. If Permittee obtains approval required in #5, they may discharge MWTP effluent to Outfall 012. The flow at this Outfall will be allowed based on recommendation of the USFS letter dated March 18, 2015 (Appendix D).

#### **S1.A.2 Capture Zone Definitions and Narrative Limits**

1. Capture Zone – The Permittee must maintain the groundwater Capture Zone as identified in Appendix B of this permit. The Capture Zone is to include all underground mine workings, the surge pond, and all surface stockpiles of ore and development rock. The Capture Zone represents the farthest extent from the mine that mine-related contaminants in groundwater and surface water are allowed. This extends from the land surface to depth at which groundwater is not affected by mining activities.
2. "Groundwater" means water in a saturated zone or stratum beneath the surface of land or below a surface water body (WAC173-200-020(12)). Groundwater includes seasonal groundwater defined as: "...groundwater that exists for a temporary period of the year and is usually associated with a particular activity or phenomenon." (WAC173-200-020(26))
3. The Permittee must capture and treat mine generated contaminated groundwater and industrial stormwater inside the Capture Zone perimeter so that surface and groundwater outside the Capture Zone does not exceed limits set in S1.A Table 4, Table 5, Table 6 and Table 7.
4. Permittee is prohibited from any mine activity inside or outside the Capture Zone that has the potential to adversely impact the monitoring function of compliance points in Tables 12, 13, 14 & 15 without pre-approval, in writing, by Ecology, Central Region Office Water Quality section.
5. Industrial stormwater is "the discharge from any conveyance that is used for collecting and conveying stormwater that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant"(40 CFR122.26(b)(14)). This includes, but is not limited to, storm water discharges from mine operations areas, equipment storage areas, ore and waste stockpile areas, ore processing and MWTP buildings, material handling areas, and immediate access roads within the mine permit boundary used by carriers of raw materials, waste material or byproducts used or created by the mine.
6. Monitoring stations GB-11, GB-12, GBES-1, and JJ-16 are to remain outside the Capture Zone. These monitoring stations are to be protected from any activity that will impair their integrity to monitor Capture Zone function.
7. Monitoring wells MW-2R, MW-14 and MW-15 are to continue to function as groundwater monitoring wells and are not to be utilized as dewatering wells.

Any change to permitted discharge rate must be authorized in writing by Ecology prior to implementation.

4. The Permittee must follow the monitoring plan for Outfall 006 as described in Technical Memo, Hydrologic and Adaptive Management Plan Supplement for Outfall 006, dated September 19, 2014. Any change to permitted discharge rate must be authorized in writing by Ecology prior to implementation.
5. Brine/ concentrate volumes hauled from the mine site for disposal are to be metered at the MWTP during loading, recorded separately as a daily total and a report submitted to Ecology as an attachment to the DMR due by the end of each month.

Table 2. MWTP Effluent Limits to All Outfalls <sup>1</sup> : MWTP location Latitude: N 48.9499655 Longitude: W -118.9791742		
Parameter	Average Monthly Limit <sup>1</sup>	Maximum Daily Limit <sup>2</sup>
Technology-performance-based Limits		
Alkalinity (as CaCO <sub>3</sub> )	194 milligrams/liter (mg/L)	263 mg/L
Chloride	3.2 mg/L	5.8 mg/L
Specific Conductivity	383 µS/cm	603 µS/cm
Nitrate + Nitrite (as N) <sup>3</sup>	2.0 mg/L	2.0 mg/L
Oil and Grease	5.0 mg/L	5.0 mg/L
Sulfate	2.7 mg/L	5.4 mg/L
Total Dissolved Solids (TDS)	214 mg/L	290 mg/L
Turbidity	2.8 NTU	3.8 NTU
Aluminum (Total)	80 micrograms/liter (µg/L)	120 µg/L
Ammonia (Total) as N	346 µg/L	483 µg/L
Arsenic (Total)	0.4 µg/L	0.7 µg/L
Copper (Total)	7.9 µg/L	9.6 µg/L
Iron (Total)	60 µg/L	71 µg/L
Lead (Total)	0.8 µg/L	0.8 µg/L
Zinc (Total)	12.7 µg/L	20.3 µg/L
Parameter	Average Monthly Limit	Minimum Daily Limit
Dissolved Oxygen (DO) mg/L	5.9 mg/L	0.5 mg/L
Parameter	Minimum	Maximum
pH	6.5 standard units (SU)	8.5 SU
1	Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.	
2	Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. This does not apply to pH.	
3	Nitrate + Nitrite (as N) will be 2.0 mg/L for both Average Monthly Limit, and Maximum Monthly Limit. An interim limit was established when the permit was issued in March 2014. The Average Monthly Limit was 4.7 mg/L, and Maximum Monthly Limit was 5.4 mg/L. Crown conducted an analysis for reduction and recommended 2.0 mg/L limit for Nitrate + Nitrite (as N) in the Mine Water Treatment Plant effluent and submitted a report, dated December 30, 2014.	

S1.A4.1 Outfall Limits

Table 3. Surface Water and Ground Water Outfall Specific Limits <sup>1</sup>		
Effluent Limits: Outfall #002 – Gold Bowl Creek (Surface Water Outfall)		
Latitude: 48:977489N Longitude: -118:9809519W		
Parameter		Instantaneous Maximum <sup>2</sup>
Flow (effluent only)		300 gpm
Parameter	Hourly Average <sup>3</sup>	
Turbidity	=/≤15 NTU for flows up to 300 gpm <sup>4</sup> =/≤20 NTU for flows up to 200 gpm 25 NTUs and above no discharge permitted until hourly average of 15 minute readings falls below 25 NTUs	
Outfall #003 – Roosevelt Adit (Surface Water Outfall)		
Latitude: 48:951502N Longitude: -118:9747506W		
Parameter	Average Monthly <sup>4</sup>	Instantaneous Maximum <sup>2</sup>
Flow	200 gpm daily average combined flow of natural and effluent discharge flow at JJ-20 unless authorized otherwise in writing by the U.S. Forest Service and approved in writing by Ecology.	220 gpm combined natural and effluent discharge flow at JJ-20
Effluent Limits: Outfall #004 – Stock Trough (Surface Water Outfall)		
Latitude: 48:9447386N Longitude: -118:972477W		
Parameter	Average Weekly <sup>3</sup> and Average Monthly <sup>4</sup>	
Flow	1 gpm year around and up to 10 gpm maximum flow during the spring freshet unless authorized otherwise in writing by the U.S. Forest service and approved in writing by Ecology	N/A at this Outfall
Effluent Limits: 2-Year Contingency Outfall #005 – Lower Marias Creek Truck Haul (Surface Water Outfall)		
Latitude: 48:9042891N Longitude: -118:869344W		
Parameter	Average Monthly <sup>4</sup>	Instantaneous Maximum <sup>2</sup>
Flow	N/A at this Outfall	Discharge from the holding tank to outfall not to exceed 200 gpm
Turbidity	Monitoring only	Monitoring only
Outfall #006 – South Fork Bolster Creek Infiltration Trench (Ground Water Outfall)		
Latitude: 48:949514N Longitude: -118:988922W		
Parameter	Average Monthly <sup>4</sup>	Instantaneous Maximum <sup>2</sup>
Flow	60 gpm daily average unless otherwise authorized and approved by Ecology in writing.	N/A at this Outfall

Table 3: Surface Water and Ground Water Outfall Specific Limits (Continued)		
Effluent Limits: Outfall 012 <sup>a</sup> -USFS Emergency Outfall, South Fork Nicholson Creek (Surface Water Outfall)		
Latitude: 48.949469N Longitude: -118.9562263W		
Parameter	Average Monthly	Instantaneous Maximum
Flow	N/A at this Outfall	N/A at this Outfall
Turbidity	N/A at this Outfall	N/A at this Outfall
1	Outfall limits defined individually.	
2	Instantaneous maximum means the highest value allowed at any given time.	
3	As continuously measured at SW-9a, hourly average is calculated from 15 minute readings, averaged and reported hourly in attachment to DMR.	
4	Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.	
5	Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.	
6	Discharge limit to Outfall 002 is based on an inverse relationship between turbidity and flow and it uses a tiered approach. It is intended to provide operational flexibility because it is on a sliding scale. The first tier ( $\leq 15$ NTU) has an hourly average flow limit up to 300 gpm. The middle tier ( $\leq 20$ NTU) has an hourly average flow limit up to 200 gpm. No discharge is permitted beyond the last tier ( $\leq 25$ NTU) until the hourly average of 15 minute readings falls below 25 NTU. The sliding scale can be described as: the flow between 15 to 20 NTU turbidity would range from 300 to 200 gpm, and the flow between 20 to 25 NTU turbidity would range from 200 to 0 gpm.	
7	Two continuous turbidity monitoring stations required for this outfall. One above the diffuser and one directly below the diffuser. Monitoring to begin 15 minutes prior to release of effluent, continue at 15 minute intervals during discharge and continue for 15 minutes after all discharge has stopped. Readings to be averaged hourly and reported as an Excel attachment in the DMR within 30 days of the end of the month.	
8	Must meet conditions set forth in S1.A.1.5 through S1.A.1.7.	

### S1.A.5 Non-Industrial Stormwater

Beginning on March 1, 2014 and continuing to February 28, 2019, the Permittee is authorized to discharge untreated non-industrial area stormwater to ground at Outfall 002d and connected infiltration trench if the discharge meets the limits as established in Table 4. DA-3 (previous Outfall 002c) is located within the Capture Zone and has been removed from compliance monitoring in this permit but is restricted to discharge only non industrial stormwater. The Permittee is allowed to store stormwater in ponds DA-10 and DA-11 and allowed to discharge to Outfall 002d if discharge meets the limits in Table 4.

Table 4. Non-industrial Stormwater Limits: March 1, 2014 to February 28, 2019		
Outfall 002d and Infiltration Trench		
Latitude: 48.9490418 N Longitude: -118.9783257 W		
Parameter <sup>1</sup>	Average Monthly Limit <sup>2</sup>	Maximum Daily Limit <sup>3</sup>
Chloride <sup>4</sup>	1.22 mg/L	N/A
Nitrate + Nitrite (as N)	1.11 mg/L	N/A
Sulfate	76 mg/L	N/A
Oil & Grease	5 mg/L	5 mg/L
Total Dissolved Solids (TDS)	310 mg/L	N/A
Ammonia (Total) as N	130 µg/L	N/A
Arsenic (Total)	4.0 µg/L	N/A
Copper (Total)	50 µg/L	N/A
Iron (Total)	170 µg/L	N/A
Manganese (Total)	10 µg/L	N/A
Zinc (Total)	600 µg/L	N/A
Specific Conductance (Field)	486 µS/cm	N/A
Parameter	Minimum	Maximum
pH (Field)	6.5 SU	8.5 SU
1	EPA Quantitation Limit approved method in 40 CFR Part 136, attached in Appendix A.	
2	Average monthly discharge limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.	
3	Maximum daily discharge limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. This does not apply to pH.	
4	The test method used for Chloride must detect at a minimum of 1.0 mg/L.	

**S1.A.6 Interim Surface and Groundwater Limits Outside the Capture Zone**

1. Beginning on March 1, 2014 and continuing to December 31, 2014, the Permittee must meet the following limits in all surface water and groundwater monitoring locations defined in Table 5.

Table 5: Interim Limits Outside Capture Zone: March 1, 2014 to December 31, 2014		
Parameter	Average Monthly	Maximum Daily <sup>2</sup>
Ammonia (Total) as N	0.384 mg/L	0.770 mg/L
Arsenic (Total)	0.01 mg/L	0.01 mg/L
Chloride	250 mg/L	N/A
Copper (Total)	0.014 mg/L	0.026 mg/L
Iron (Total)	0.30 mg/L	N/A
Manganese (Total)	0.09 mg/L	N/A
Nitrate + Nitrite (as N)	10 mg/L	N/A
Oil and Grease	10 mg/L	15 mg/L
Specific Conductance (Field)	700 µS/cm	N/A
Sulfate	250 mg/L	N/A
Total Dissolved Solids (TDS)	500 mg/L	N/A
Total Suspended Solids (TSS)	20 mg/L	30 mg/L
Zinc (Total)	0.083 mg/L	0.166 mg/L
Parameter	Minimum	Maximum
pH – (Field)	6.4 SU	9.0 SU
1	Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured	
2	Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. This does not apply to pH.	

**S1.A.7 Final Surface and Groundwater/Seep & Spring Limits Outside the Capture Zone**

1. Beginning on January 1, 2015 and continuing to February 28, 2019, the Permittee must meet the following limits in all surface water and groundwater / seep and spring monitoring locations defined in Table 6 and Table 7.

Table 6. Final Surface Water Limits Outside the Capture Zone: January 1, 2015 to February 28, 2019		
Parameter		Average Monthly Limit <sup>1</sup>
Chloride		2 mg/L
Nitrate + Nitrite (as N) <sup>2</sup>		0.32 mg/L
Oil & Grease		5 mg/L
Sulfate <sup>3</sup>		72 mg/L
Total Dissolved Solids <sup>4</sup>		290 mg/L
Total Suspended Solids <sup>4</sup>		20 mg/L
Specific Conductance (Field)		579 $\mu$ S/cm
Ammonia, (Total) as N		100 $\mu$ g/L
Arsenic (Total) <sup>5</sup>		10 $\mu$ g/L
Copper (Total)		10 $\mu$ g/L
Iron (Total)		140 $\mu$ g/L
Manganese, (Total)		20 $\mu$ g/L
Zinc (Total)		30 $\mu$ g/L
Parameter	Minimum	Maximum
pH - (SU) Field	7.0	8.9
1	Average monthly limit means the highest allowable average of daily sample analyses over a calendar month. To calculate the average value to compare to the limit, you add the value of each sample parameter analysis measured during a calendar month and divide this sum by the total number of daily samples taken.	
2	Nitrate limit for SW-9a is 2.0 mg/L. Crown conducted an analysis for reduction and recommended 2.0 mg/L limit for Nitrate + Nitrite (as N) in the Mine Water Treatment Plant effluent and submitted a report, dated December 30, 2014.	
3	Arsenic (As), Total -The limit will be 11 $\mu$ g/L at SW-5 instead of 10 $\mu$ g/L.	
4	At SW4, and SW5 Total Suspended Solids (TSS) will be for monitoring, not for compliance. Please see Table 13 for detailed description.	
5	At SW4 Sulfate will be for monitoring, not for compliance. Please see Table 13 for detailed description.	
6	At SW5 Total Dissolved Solids (TDS) will be for monitoring, not for compliance. Please see Table 13 for detailed description.	

Table 7: Final Groundwater Seep and Spring Limits Outside the Capture Zone: January 1, 2015 to February 28, 2019		
Parameter	Average Monthly Limit	
Chloride <sup>a</sup>	2.0 mg/L	
Nitrate + Nitrite (as N)	1.33 mg/L	
Oil & Grease	5 mg/L	
Sulfate	69.5 mg/L	
Total Dissolved Solids	290 mg/L	
Total Suspended Solids	38 mg/L	
Specific Conductance (Field)	486 µS/cm	
Ammonia (Total) as N	100 µg/L	
Arsenic (Total) <sup>c</sup>	10 µg/L	
Copper (Total) <sup>a</sup>	10 µg/L	
Iron (Total) <sup>d</sup>	220 µg/L	
Manganese (Total) <sup>a</sup>	90 µg/L	
Zinc (Total)	30 µg/L	
Parameter	Minimum	Maximum
pH - (SU) Field	6.4	9.0
1	Average monthly limit means the highest allowable average of daily sample analyses over a calendar month. To calculate the average value to compare to the limit, you add the value of each sample parameter analysis measured during a calendar month and divide this sum by the total number of daily samples taken.	
2	MW-4 : Arsenic (As), Total – This parameter is for monitoring, not for compliance. Please see Table 14 for detailed description.	
3	MW-4 : Manganese (Mn), Total – This parameter is for monitoring, not for compliance. Please see Table 14 for detailed description.	
4	MW-7 : Iron (Fe), Total; and Copper (Cu), Total; Manganese, Total; Zinc, Total; Arsenic, Total - These parameters is for monitoring, not for compliance. Please see Table 14 for detailed description.	
5	MW-13 : Chloride (Cl) – This parameter is for monitoring, not for compliance. Please see Table 14 for detailed description.	

## S2. Monitoring Requirements

### S2.A.1 Monitoring schedules

The Permittee must monitor in accordance with the following schedules and the requirements specified in Appendix A. Maps delineating monitoring and compliance stations are located in Appendix C. Exceedances must be addressed under the Adaptive Management Plan, Appendix C Action Levels.

Table 8: NRCS SNOTEL #1159 Gold Axe Camp Monitoring Schedule			
Daily <sup>1</sup>	WTEQ.I-1 Snow Water Equivalent (in)	SNWD.I-1 Snow Depth (in)	PREC.I-1 Year-to-Date Precipitation (in)
1	Recorded daily data to be submitted as an Excel attachment with the DMR.  The Permittee must record and report daily precipitation and snow pack water release data in DMR for NRCS SNOTEL Station #1159, Gold Axe Camp. It must report the cumulative water year (October 1 to September 30) total (Year-to-Date Precipitation – PREC.I-1 (in)) on the monthly DMR. The Permittee must report the cumulative precipitation each day for the water year.		



<b>Table 9. Wastewater Effluent MWTP building – Monitoring Schedule</b>			
The Permittee must collect wastewater effluent sample prior to the effluent leaving the outfall manifold in MWTP building. Flow volumes to individual outfalls are to be recorded prior to discharge from the MWTP. Volume to Outfall 004 will be metered at the A-line distribution box splitting flows to Outfall 003 and Outfall 004.			
Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
MWTP effluent flow for Outfalls 002, 003, 004, 005, 006, 012	gpm	Continuous	Metered/recorded
MWTP effluent dust abatement – outside the Capture Zone	Gallons per month		Record gallons per month discharged outside the Capture Zone
Brine waste – hauled off site	Gallons per month	Volume measurement	Record gallons per month removed from mine site
Specific Conductance (Field)	µS/cm	Twice per month	Metered/recorded
Turbidity (Field)	NTU	"	Metered/recorded
Alkalinity (CaCO <sub>3</sub> )	mg/L	"	24 hour composite <sup>2</sup>
Chloride	mg/L	"	"
Chemical Oxygen Demand (COD)	mg/L	Monthly	24 hour composite <sup>2</sup>
Dissolved Oxygen (Field)	mg/L	Twice per month	Metered/recorded
Nitrate + Nitrite (as N)	mg/L	"	24 hour composite <sup>2</sup>
Oil and Grease	mg/L	"	"
Sulfate	mg/L	"	"
Total Dissolved Solids	mg/L	"	"
Total Suspended Solids	mg/L	"	"
Ammonia Total (as N)	µg/L	"	"
Arsenic (Total)	µg/L	"	"
Copper (Total)	µg/L	"	"
Iron (Total)	µg/L	"	"
Lead (Total)	µg/L	"	"
Zinc (Total)	µg/L	"	"
pH <sup>3</sup> (Field)	standard units	Continuous	Metered/recorded
Temperature (Field)	°C	Continuous	Measured prior to discharge
1	Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The Permittee must monitor flow daily when continuous monitoring is not possible.		
2	24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample. Crown will have a grace period until August 1, 2014 to complete installation and calibration of composite sampling equipment for all parameters. During the grace period, Crown will collect grab samples over a fifteen (15) minute period or less.		
3	When pH is continuously monitored, excursions between 5.0 and 6.5, or 8.5 and 10.0 are not be considered violations if no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month. Any excursions below 5.0 and above 10.0 at any time are violations.		

The Permittee must monitor water quality at the following locations. These remain the same as the current permit. A grab sample is permitted for the following sample locations:

- Lowest elevation mine sump in the Southwest Zone workings
- Lowest elevation mine sump in the Gold Bowl workings
- Influent to the treatment plant

The Permittee must monitor water quality at the above locations according to Table 10:

Table 10. Mine Sump and MWTP Influent Monitoring Schedule			
Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Flow -Influent to MWTP only	gpm	Continuous <sup>1</sup>	Flow meter
pH (Field)	SU	1 <sup>st</sup> full and 3 <sup>rd</sup> week, or more frequently as specified in the Operations and Maintenance manual	Grab <sup>2</sup>
Temperature (Field)	°C	"	"
Dissolved Oxygen (Field)	mg/L	"	"
Turbidity (Field)	NTU	"	"
Specific Conductance (Field)	µS/cm	"	"
Hardness	mg/L	"	"
Total Dissolved Solids	mg/L	"	"
Chloride	mg/L	"	"
Sulfate	mg/L	"	"
Nitrate + Nitrite (as N)	mg/L	"	"
Fluoride	mg/L	"	"
Alkalinity	mg/L	"	"
Bicarbonate	mg/L	"	"
Calcium	mg/L	"	"
Magnesium	mg/L	"	"
Oil and Grease	mg/L	"	"
Total Suspended Solids	mg/L	"	"
Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Antimony (Total)	µg/L	"	"
Arsenic (Total)	µg/L	"	"
Beryllium (Total)	µg/L	"	"
Copper (Total)	µg/L	"	"
Chromium (Total)	µg/L	"	"
Lead (Total)	µg/L	"	"
Mercury (Total)	µg/L	"	"
Selenium (Total)	µg/L	"	"
Silver (Total R)	µg/L	"	"
Thallium (Total)	µg/L	"	"
Aluminum (Total)	µg/L	"	"
Iron (Total)	µg/L	"	"
Manganese (Total)	µg/L	"	"
Nickel (Total)	µg/L	"	"
1	Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance.		
2	Grab means an individual sample collected over a fifteen (15) minute, or less, period.		

#### S2.A.2 Gold Bowl Flow and Turbidity Monitoring Schedule

The Permittee will monitor and report flow discharged to Outfall 002 at the MWTP discharge manifold. Flow is to be continuously recorded and not to exceed permitted flows.

Turbidity will be monitored at Gold Bowl monitoring station SW-9a at 15 minute intervals and average hourly. Hourly averages are to be recorded and reported monthly with the DMR as an attached document in Excel format.

Table 11. Gold Bowl - Turbidity Monitoring Schedule SW-9a			
Parameter	Units & Specification	Minimum Sampling Frequency	Sample Type
Turbidity	NTU	15 minutes, averaged and recorded hourly	recorded remote sensor reading
1	Crown may use a hand turbidity meter measurement for spot compliance twice daily, but shall report both remote sensor and hand held turbidity meter readings in its submittals.		

#### S2.A.3 Outfall 003 Flow Monitoring Schedule

MWTP effluent discharge flow to Outfall 003 is to be monitored and reported as two components: 1) flow discharged to Outfall 003 from the MWTP and 2) combined measured flow at the JJ-20 Parshall flume. Flow readings at the Parshall flume at JJ-20 are to be taken as specified by the USFS. When discharge occurs at the Outfall, the daily average flow data collected at the JJ-20 Parshall flume is to be attached as a supplemental Excel file in PARIS by the end of each month in which the DMR is due. Permittee is to inspect the condition of the Parshall flume and electronic monitoring instruments monthly to ensure proper functionality of all equipment.

#### S2.A.4 Outfall 004 Flow Monitoring Schedule

MWTP effluent discharge flow to Outfall 004 is to be monitored and reported as a monthly average. Meter is installed in the Outfall 004 pipeline down stream of the junction with Outfall 003.

#### S2.A.5 Outfall 005 Discharge Monitoring Schedule

MWTP effluent discharge to Outfall 005 is to be monitored and reported in the DMR as quantity discharged from the MWTP. Discharge from the holding tank at the bottom of Marias Creek cannot exceed 200 gpm instantaneous measurement. Turbidity monitoring is required. No turbidity limit has been set for this Outfall for compliance. Two turbidity monitoring stations required for this outfall. One above the diffuser and one directly below the diffuser. Monitoring to begin 15 minutes prior to release of effluent, continue at 15 minute intervals during discharge and

continue for 15 minutes after all discharge has stopped. Readings to be averaged hourly and reported in Excel format as an attachment to the DMR within 30 days of the end of the month.

**S2.A.6 Outfall 006 Flow Monitoring Schedule**

The Permittee will monitor and report flow discharges to Outfall 006 at the Mine Water Treatment Plant. Flow is to be continuously recorded and not to exceed the permitted 60 gpm daily average unless otherwise authorized by Ecology in writing.

**S2.A.7 Outfall 012 Discharge Monitoring Schedule**

The Permittee will monitor and report flow discharged to Outfall 012 at the MWTP discharge manifold. Flow is to be continuously recorded. Conditions required for approved use of this Outfall are set forth in S1.A.1.

**S2.A.8 Outfall 002d Non Industrial Stormwater Monitoring Schedule**

The Permittee will monitor non industrial stormwater discharged to Outfall 002d located outside the Capture Zone. Sampling will occur when water is present prior to any discharging to ground. All sample results are to be recorded in the DMR.

**S2.A.9 MWTP Brine Concentrate Monitoring Schedule**

Permittee is to collect a minimum 1 Liter sample of each load of brine hauled to the disposal site and retain the sample onsite until the brine has been discharged to the approved retention site. In the case of a spill, the sample is to be immediately analyzed for parameters as required by Ecology. A record log of all brine volume discharge is to be kept at the Mine Water Treatment Plant and the log is to be made available for inspections and archived for retention as defined in Section S3.B.

Table 12: Non-Industrial Stormwater Monitoring		
Water Monitoring Stations	Station	Sampling Frequency
Outfall 002d	Outfall 002d	2/month / Monthly
Parameter	Units & Speciation	Sample Type
Chloride	mg/L	Grab
Nitrate + Nitrite (as N)	mg/L	"
Sulfate	mg/L	"
Total Dissolved Solids (TDS)	mg/L	"
Total Suspended Solids (TSS)	mg/L	"
Oil & Grease	mg/L	"
Ammonia (Total) as N	ug/L	"
Arsenic (Total)	ug/L	"

Parameter	Units & Speciation	Sample Type
Iron (Total)	µg/L	"
Manganese (Total)	µg/L	"
Zinc (Total)	µg/L	"
Specific Conductance (Field)	µS/cm	Measurement
pH (Field)	SU	Measurement
1	Sampling required 1 <sup>st</sup> full week and 3 <sup>rd</sup> week for the duration of the spring freshet as defined in S1. Outfall 002d to be sampled when stormwater is present prior to discharge.	
2	Grab means an individual sample collected over a fifteen (15) minute, or less, period.	

Table 13. Surface Water Monitoring Schedule and Compliance Locations		
Water Monitoring Stations	Station <sup>1</sup>	Sampling Frequency (Default sampling frequency is monthly unless footnoted)
Surface water Stations	SW-1 <sup>2</sup> , SW-2, SW-4 <sup>10</sup> , SW-5 <sup>1, 10</sup> , SW-7, SW-8, SW-9a <sup>3, 4</sup> , SW-10 <sup>9</sup> , SW-11, SW-12, SW-13, SW-14 <sup>5</sup> , GW-2 (Roosevelt Adit),	Monthly
Surface Water Monitoring Parameters, Units and Sample Type		
Parameter	Units & Speciation	Sample Type
Flow	gpm	Measurement
pH <sup>1</sup> (Field)	standard units (SU)	Measurement
Dissolved Oxygen (Field)	mg/L	Grab <sup>8</sup>
Alkalinity (as CaCO <sub>3</sub> )	mg/L	"
Chloride	mg/L	"
Specific Conductance (Field)	µS/cm	"
Nitrate + Nitrite (as N)	mg/L as N	"
Oil and Grease	mg/L	"
Sulfate	mg/L	"
Total Dissolved Solids	mg/L	"
Total Suspended Solids	mg/L	"
Parameter	Units & Speciation	Sample Type
Total Suspended Solids	mg/L	"
Turbidity (Field)	NTU	"
Temperature (Field)	°C	Field Measurement
Ammonia (Total as N)	µg/L	Grab
Arsenic (Total)	µg/L	"
Copper (Total)	µg/L	"
Iron (Total)	µg/L	"
Lead (Total)	µg/L	"
Manganese (Total)	µg/L	"
Zinc (Total)	µg/L	"
1	Compliance and monitoring sample stations in Gold Bowl Creek, Surface water, Groundwater Sampling and Compliance location maps and coordinate locations in Appendix C.	
2	Only flow data collected.	
3	Sampling required every other week limited to two samples per month for duration of the spring freshet. Following the first 0.5 inch of snow pack water release after March 15 <sup>th</sup> the Permittee must collect the first available sample checking daily for the potential for water release data at Smote #1159.	
4	In-stream continuous turbidity meter deployed at SW-9a - Turbidity data minimum 15 minute readings, averaged hourly, attached as an Excel document to DMR.	

5	SW-14 to be sampled 1 <sup>st</sup> full week and 3 <sup>rd</sup> week during the months of September and October, once per month otherwise, access dependent.
7	The Permittee must report the field pH measurement.
8	Grab means an individual sample collected over a fifteen (15) minute, or less, period.
9	Monitoring, not compliance location.
10	At SW4, and SW5 Total Suspended Solids (TSS) will be for monitoring, not for compliance. The trigger level for TSS at SW4, and SW5 is set at 20 mg/L. If the TSS concentration reaches at 20 mg/L at SW4, and SW5, the following actions will be taken: 1. Report result to Ecology within 72 hrs of receipt of data; 2. If result exceeds 20 mg/L in the following month, submit written plan for evaluation to Ecology within one week of receipt of the data. Sulfate will not be compliance parameter for SW-4, If the Sulfate concentration reaches at 72 mg/L at SW4, the following actions will be taken: 1. Report result to Ecology within 72 hrs of receipt of data; 2. If result exceeds 72mg/L in the following month, submit written plan for evaluation to Ecology within one week of receipt of the data. Total Dissolved Solids will not be compliance parameter for SW-5, If the Total Dissolved Solids concentration reaches at 290 mg/L at SW5, the following actions will be taken: 1. Report result to Ecology within 72 hrs of receipt of data; 2. If result exceeds 290mg/L in the following month, submit written plan for evaluation to Ecology within one week of receipt of the data.
Permittee may request a reduction in monitoring after one (1) full year of monitoring results have been collected.	

All new dewatering wells and groundwater monitoring wells will be monitored on a schedule to be set by Ecology in writing at the time of approval for installation.

Table 14. Seeps and Springs and Groundwater Monitoring Parameters, Units and Sample Type		
Groundwater Monitoring Stations	Station	Sampling Frequency (Default sampling frequency is monthly, unless footnoted)
Bedrock Monitoring Wells	MW-2R <sup>1</sup> , MW-14 <sup>1</sup> , MW-15 <sup>1</sup> , MW-16 <sup>1,2</sup> , MW-6R <sup>1,2</sup> , MW-18 <sup>1</sup>	Monthly
Monitoring Wells	MW-1, MW-3, MW-4 <sup>8,9</sup> , MW-7 <sup>10</sup> , MW-9, MW-11, MW-12, MW-13 <sup>11</sup>	Monthly
Seeps and Springs	JJ-14, JJ-15, JJ-16, JJ-18, JJ-20, JJ-21 <sup>2</sup> , JJ-26, GB-11 <sup>1</sup> , GB-12 <sup>1</sup> , and GBES-1 (Grey Pipe),	Monthly
2011 landslide toe <sup>12,13</sup>		Monthly
Piezometers <sup>2,3</sup>	All existing and new	Monthly
Dewatering Wells <sup>2</sup>	D-1, D-2, D-3, D-4, D-5, D-6, D-8, D-9 IW-12 (SDW-12) <sup>1,2</sup>	Monthly
Parameter	Units & Speciation	Sample Type
Measured depth to groundwater <sup>3</sup>	Feet (nearest 0.01 ft)	Measurement
Flow <sup>1</sup>	gpm	Measurement
Total monthly volume pumped <sup>4</sup>	gallons	Metered
pH <sup>5</sup> (Field)	standard units	Measurement
Dissolved Oxygen (Field)	mg/L	Grab <sup>6</sup>
Alkalinity (as CaCO <sub>3</sub> )	mg/L	"
Chloride	mg/L	"
Specific Conductance (Field)	µS/cm	"
Nitrate (N+N)	mg/L as N	"
Oil and Grease	mg/L	"
Sulfate	mg/L	"

Parameter	Units & Speciation	Sample Type
Total Suspended Solids	mg/L	"
Turbidity (Field)	NTU	"
Temperature (Field)	°C	Field Measurement
Ammonia (Total as N)	µg/L	Grab
Arsenic (Total)	µg/L	"
Copper (Total)	µg/L	"
Iron (Total)	µg/L	"
Lead (Total)	µg/L	"
Manganese, Total	µg/L	"
Zinc (Total)	µg/L	"
1	Sampling required 1 <sup>st</sup> full week and 3 <sup>rd</sup> week for the duration of the spring freshet plus 30 days after all snow has melted as reported at Snotel#1159 Gold Axe Camp. All new dewatering and monitoring wells will be monitored according to the provisions established in this permit.	
2	Monitoring, not compliance locations	
3	The Permittee is required to measure the depth to ground water for monitoring wells, piezometers & dewatering wells. Piezometers only report depth to groundwater on DMR.	
4	Permittee is to report total volume pumped for each dewatering well in the DMR.	
5	The Permittee must report the field pH measurement.	
6	Grab means an individual sample collected over a fifteen (15) minute, or less, period.	
7	The Permittee is required to measure the flow for springs only.	
8	MW-4 : Arsenic (As), Total – This parameter is for monitoring, not for compliance. The trigger level for arsenic at MW-4 is set at 15 ug/L, which is 1.5 times the final groundwater compliance limit. If arsenic concentration reaches 15 ug/L at MW-4, the following actions will be taken: 1. Report result to Ecology within 72 hrs of receipt of data; 2. If result exceeds 15 ug/L in the following month, submit written plan for evaluation to Ecology within one week of receipt of the data.	
9	MW-4 : Manganese (Mn), Total – This parameter is for monitoring, not for compliance. The trigger level for manganese at MW-4 is set at 220 ug/L. If manganese concentration reaches 220 ug/L at MW-4, the following actions will be taken: 1. Report result to Ecology within 72 hrs of receipt of data; 2. If result exceeds 220 ug/L in the following month, submit written plan for evaluation to Ecology within one week of receipt of the data.	
10	MW- 7 : Iron (Fe), Total; and Copper (Cu), Total; Arsenic, Total; Manganese, Total; and Zinc, Total, - These parameters are for monitoring, not for compliance. Crown submitted a Technical Memo and informed that integrity of this monitoring well is compromised. Crown is investigating the problem. As recommended in the memo, until the investigation is completed, Ecology would not consider exceedances of Copper, Iron, Arsenic, Manganese, and Zinc at this location as a violation.	
11	MW-13 : Chloride (Cl) – This parameter is for monitoring, not for compliance. The trigger level for chloride at MW-13 is set at 20 mg/L. If chloride concentration reaches 20 mg/L at MW-13, the following actions will be taken: 1. Report result to Ecology within 72 hrs of receipt of data; 2. If result exceeds 20 mg/L in the following month, submit written plan for evaluation to Ecology within one week of receipt of the data.	
12	Flow, dissolved oxygen, turbidity, oil and grease excluded from parameters required for these monitoring locations.	
13	Sample to be collected when discharge is occurring.	
Permittee may request a reduction in monitoring after one (1) full year of monitoring results have been collected.		

Permittee is required to follow the guidelines set forth in the 2007 Hydrologic Monitoring Plan (3.5.4) for monitoring the Marias Creek Haul road monitoring stations MC-1, MC-2 & MC-3. No mixing zones are permitted. All Marias Creek haul road drainage discharge must meet RCW90.48 turbidity requirements. A copy of the US Forest Service Marias Creek Haul Road Plan of Operations and Road Use Permit are attached in Appendix E, and made a part of this permit.

Table 15. Mine Haul Road Monitoring Schedule		
Stormwater Monitoring Stations	Station	Sampling Frequency
Access Roads – Marias Creek	MC-1, MC-2, MC-3	Monthly
Table 15. Mine Haul Road Monitoring Parameters, Units and Sample Type		
Parameter	Units & Speciation	Sample Type
Temperature (Field)	°C	Field Measurement
Dissolved Oxygen (Field)	mg/L	Grab <sup>2</sup>
Chloride	mg/L	"
Magnesium	mg/L	"
Sodium	mg/L	"
Specific Conductance (Field)	µS/cm	Field Measurement
Turbidity (MC-1 and MC-3) (Field)	NTU	Monthly, except bi-weekly <sup>3</sup> during April, May, and June
Total Suspended Solids	mg/L	"
1	Permittee may request a modification to the HMP subject to approval by Ecology.	
2	Grab means an individual sample collected over a fifteen (15) minute, or less, period.	
3	Bi-Weekly means every two weeks.	

Table 16. Whole Effluent Toxicity Testing – Final Wastewater Effluent			
Acute Toxicity Testing	Rainbow trout 96-hour static-renewal test	<i>Oncorhynchus mykiss</i>	EPA-821-R-02-012
	Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012
Chronic Toxicity Testing	Fathead minnow survival and growth	<i>Pimephales promelas</i>	EPA-821-R-02-013
	Water flea survival and reproduction	<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013
	Alga	<i>Pseudokirchneriella subcapitata</i> (formerly <i>Selenastrum capricornutum</i> )	EPA-821-R-02-013
Additional requirements specified in Special Condition S15 and S16.			



Table 17. Permit Renewal Application Requirements <sup>1</sup> – Final Wastewater Effluent			
See Appendix A to identify the specific pollutants in the priority pollutant groups listed below			
Cyanide	µg/L	Once per year	24-Hour composite
Total Phenolic Compounds	µg/L	Once per year	24-Hour composite
Priority Pollutants (PP) – Total Metals	µg/L; ng/L for mercury	Once per year <sup>1</sup>	24-Hour composite <sup>2</sup> Grab for mercury
PP – Volatile Organic Compounds	µg/L	Once per year	24-Hour composite
PP – Acid-extractable Compounds	µg/L	Once per year	24-Hour composite
PP – Base-neutral Compounds	µg/L	Once per year	24-Hour composite
1	Sampling will occur in the month of December 2014, April 2015, July 2016 and October 2017. After one full suite (December 2014) of priority pollutant groups has been submitted to Ecology for review, the Permittee may submit a written request for a reduction in parameter testing. Ecology will evaluate the request based on analyses.		
2	24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.		

#### S2.B. Sampling and analytical procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality. A QAPP will be submitted to Ecology by April 1, 2014.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136 (or as applicable in 40 CFR subchapters N [Parts 400–471] or O [Parts 501–503]) unless otherwise specified in this permit. Ecology may only specify alternative methods for parameters without limits and for those parameters without an EPA approved test method in 40 CFR Part 136.

Permittee must conform to the credible data policy for QA/QC for all individuals collecting water samples such that representative samples are collected and submitted. This performance will be demonstrated in the QAPP.

#### S2.C. Flow measurement, field measurement, and continuous monitoring devices

The Permittee must:

1. Select and use appropriate flow measurement, field measurement and continuous monitoring devices and methods consistent with accepted scientific practices.

2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard and the manufacturer's recommendation for that type of device.
3. Calibrate continuous monitoring instruments based on manufacturers recommendations. The Permittee:
  - May calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.
  - Must calibrate continuous pH measurement instruments using a grab sample analyzed in the lab with a pH meter calibrated with standard buffers and analyzed within 15 minutes of sampling.
  - Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
4. Record the following information for each calibration of field instruments and maintain records for quarterly inspections:
  - Date
  - Time
  - Calibrations completed and results
  - Name of calibrator
  - Name of field data collector using instrument

**S2.D. Laboratory accreditation**

The Permittee must ensure that all monitoring data required by Ecology for permit specified parameters is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. The Permittee must obtain accreditation for conductivity and pH if it must receive accreditation or registration for other parameters.

**S2.E. Request for reduction in monitoring**

The Permittee may request a reduction of the sampling frequency after twelve (12) months of monitoring. Ecology will review each request and at its discretion grant the request when it reissues the permit or by a permit modification.

The Permittee must:

- Provide a written request.
- Clearly state the parameters for which it is requesting reduced monitoring.

- Clearly state the justification for the reduction.

### **S3. Reporting and Recordkeeping Requirements**

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

#### **S3.A. Reporting**

The first monitoring period begins on **March 1, 2014** and **within 6 months** Permittee will fully implement WQWebDMR. The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on the electronic Discharge Monitoring Report (DMR) form provided by Ecology within WQWebDMR. Include data for each of the parameters tabulated in Special Condition S2 and as required by the form. Report a value for each day sampling occurred (unless specifically exempted in the permit) and for the summary values (when applicable) included on the electronic form.

To find out more information and to sign up for WQWebDMR go to:  
<http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>

If unable to submit electronically (for example, if you do not have an internet connection), the Permittee must contact Ecology to request a waiver and obtain instructions on how to obtain a paper copy DMR.

Enter the "no discharge" reporting code for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate, if the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period.

2. Report single analytical values below detection as "less than the detection level (DL)" by entering < followed by the numeric value of the detection level (e.g. < 2.0) on the DMR. If the method used did not meet the minimum DL and quantitation level (QL) identified in the permit, report the actual QL and DL in the comments or in the location provided.
3. Report the test method used for analysis in the comments if the laboratory used an alternative method not specified in the permit and as allowed in Appendix A.
4. Calculate average values (unless otherwise specified in the permit) using:

- The reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.
  - One-half the detection value (for values reported below detection) if the lab detected the parameter in another sample for the reporting period.
  - Zero (for values reported below detection) if the lab did not detect the parameter in another sample for the reporting period.
5. The contract laboratory reports must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter.
  6. Permittee is to submit a electronic copy of all laboratory results for all monitoring and compliance water samples.
  7. Permittee is to submit an electronic copy of all field notes taken with all monitoring and compliance sampling with the DMR download. Alteration or addition to the field notes are not permitted after leaving the field. Any changes to the information contained in the field notes may be submitted as a separate document and attached to the field data log.
  8. The Permittee must submit DMRs electronically no later than the dates specified below, unless otherwise specified in this permit.
  9. Submit DMRs for parameters with the monitoring frequencies specified in S2 monthly at the reporting schedule identified below. The Permittee must:
    - Submit **monthly** electronic DMRs by the **15<sup>th</sup>** day of the following month. The Permittee is granted a six (6) month interface period (**March 1, 2014 to September 1, 2014**) in which data interface problems associated with the Permittees ability to download data to PARIS will be addressed without penalty.
    - Turbidity data for SW-9a will be submitted with the DMR as an Excel attachment.
    - All other data attachments will be due by the **30<sup>th</sup>** of the following month.
  10. Submit reports to Ecology online using Ecology's electronic WQWebDMR submittal forms (electronic DMRs) as required above.

**S3.B. Records retention**

The Permittee must retain records of all monitoring and sampling information for a minimum of three (3) years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data

used to complete the application for this permit. The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

**S3.C. Additional monitoring by the Permittee**

If the Permittee monitors any pollutant more frequently than required by Special Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's WQWebDMR unless otherwise specified by Special Condition S2. Internal process control parameters are exempt from this requirement.

**S3.D. Reporting permit violations**

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

- Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
- If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within thirty (30) days of sampling.

**a. Immediate reporting**

The Permittee must immediately (within 24 hours) report to the Department of Ecology conditions listed below:

- 1) Failure of the groundwater Capture Zone.
- 2) MWTP Brine spills.
- 3) Spills of blasting agents.

Central Regional Office  
15 West Yakima Ave., Suite 200  
Yakima, WA 98902-3452

509-575-2490

**b. Twenty-four-hour reporting**

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at 509-575-2490, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

- Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.
- Any unanticipated bypass that causes an exceedance of any effluent limit in the permit (See Part S4.B., "Bypass Procedures").

- Any upset that causes an exceedance of an effluent limit in the permit (See G.15, "Upset").
- Any violation of a maximum daily or instantaneous maximum discharge limit at any outfall for any of the pollutants or flow volumes in Section S1.A of this permit.
- Any overflow prior to the treatment works and outside the Capture Zone, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit.
- Any leak or failure of any MWTP transmission pipeline distribution system outside the Capture Zone.

**c. Report within five days**

The Permittee must also submit a written report within five days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above. The report must contain:

- A description of the noncompliance and its cause.
- Maps, drawings, gps locations, aerial photographs, results of sample analyses if taken, or pictures to show the location and cause(s) of the noncompliance.
- The period of noncompliance, including exact dates and times.
- Permittee contact person and contact information.
- The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
- Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- If the noncompliance involves an overflow prior to the treatment works and outside the Capture Zone, an estimate of the quantity (in gallons) of untreated overflow and receiving water body impacted.

**d. Waiver of written reports**

Ecology may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report. Request of waiver to Ecology must be in writing and must clearly delineate the noncompliance and its cause.

**e. All other permit violation reporting**

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in subpart c, above. Compliance with these requirements does not relieve the

Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

**f. Report Submittal**

The Permittee must submit reports to the addresses listed in S3. D.a.1.

**S3.E. Other reporting**

**a. Spills of Oil or Hazardous Materials**

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of RCW 90.56.280 and chapter 173-303-145. You can obtain further instructions at the following website:  
<http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm>.

**b. Annual Meeting Reports**

The Permittee must submit two (2) bound, hard color copies and an electronic copy (in pdf format) of required documents for the annual meeting to be held in March. Documents (2 complete and final, bound hard copies and 1 pdf electronic copy) must be received by Ecology during regular business hours at the Central Region Office (CRO) a minimum of **2 weeks prior to the selected meeting date**. Reports to be included in the Annual Meeting documents must include but are not limited to:

1. Adaptive Management Plan to address:
  - a. Development Rock Management Plan
  - b. Capture Zone evaluation
  - c. Shotcrete and Grout evaluation
2. Hydrologic Monitoring Data Evaluation
3. Ecological and Aquatic Resources Report
4. New Outfall Status Report

**c. Failure to submit relevant or correct facts**

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to Ecology, it must submit such facts or information promptly in writing.

**S3.F. Maintaining a copy of this permit**

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

**S3.G. Notification of Mine Closure**

The Permittee must provide written notification to Ecology at least 90 days prior to temporary or permanent closure of the mine. The Permittee must continue monitoring according to the Monitoring Requirements, Condition S2. and the Hydrologic Monitoring Plan, Condition S15.

If the Permittee plans to permanently close the mine during the 5 year term of this permit, it must submit complete a mine closure plan to Ecology 90 days prior to the planned closure date that addresses reclamation and rehabilitation, long term (40 years, HMP) monitoring and protection of ground and surface water. 30 days prior to submission of the rehabilitation plan to Ecology, a scoping meeting will be held to delineate specific components to be submitted in the reclamation and rehabilitation/monitoring plan. A complete and approvable reclamation and rehabilitation plan must be submitted to the CRO Water Quality section of Ecology 30 days prior to closure.

**S4. Operation and Maintenance**

The Permittee must, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances), which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out in a manner approved by Ecology.

**S4.A. MWTP Operations and maintenance (O&M)**

**S4.A.1. MWTP O&M manual submittal and requirements**

The Permittee must:



1. Update the MWTP O&M Manual that meets the requirements of 173-240-150 WAC and submit it to Ecology for approval by **September 1, 2014**. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).
2. Review the MWTP O&M Manual at least annually and confirm this review by letter to Ecology by **September 1** of each year.
3. Submit to Ecology for review substantial changes or updates to the O&M Manual whenever it incorporates them into the manual. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
4. Keep the approved MWTP O&M Manual at the permitted facility.
5. Follow the instructions and procedures of this manual.

#### **S4.A.2.MWTP O&M manual components**

In addition to the requirements of WAC 173-240-080 (1) through (5), the MWTP O&M Manual must include:

1. Emergency procedures for plant shutdown and cleanup in the event of a wastewater system upset or failure.
2. Identify system components based on O & M Manual which if failed could pollute surface water or could impact human health. Provide a procedure for a routine schedule of checking the function of these components.
3. Wastewater system maintenance procedures that contribute to the generation of process wastewater.
4. Any directions to maintenance staff when cleaning, or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine.)
5. Wastewater sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.
6. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit
7. Treatment plant process control monitoring schedule.
8. Specify procedures for monitoring and addressing frozen effluent pipelines to discharge outfalls.

#### **S4.A.3. Holding Pond Leak Detection Procedures**

All mine water, dewatering well water, and industrial stormwater when stored outside the Capture Zone must be held either in double lined

holding ponds with leak detection or single lined with monitoring as approved by Ecology.

If a leak is detected; Permittee must immediately:

1. Notify the Central Region Office (CRO) of Ecology, WQ Section Manager in Yakima.
2. Immediately remove all material from the leaking lagoon/pond to a secure storage structure.
3. Delineate the concentration and quantity of the leaked materials.
4. Develop a plan on capture and removal of leaked materials. The complete plan must be submitted to Ecology within 10 working days of the discovery of the leak.

**S4.A.4. PAG and Development Rock Liner Installation Requirements, Leak Detection Procedures and Testing Procedures**

Synthetic liner meeting specifications must be installed below a majority of the area of all Potentially Acid Generating (PAG) surface stockpiles of ore and PAG development rock prior to the 2014 spring freshet with the remainder to be completed by the end of 2015.

A complete plan containing synthetic liner specifications, installation methodology, timeline for installation, and monitoring schedule for discharge from the collection flows from each liner (by area) are to be submitted to Ecology for review by April 1, 2014.

**S4.B. Bypass procedures**

Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10) days before the date of the bypass.

2. Bypass is unavoidable and unanticipated, and results in noncompliance of this permit.

This permit authorizes such a bypass only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent damage or loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
  - b. No feasible alternatives to the bypass exist, such as:
    - The use of auxiliary treatment facilities.
    - Retention of untreated wastes.
    - Stopping production.
    - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
    - Transport of treated or untreated wastes to another treatment facility or transport of treated wastes to another disposal location.
  - c. The Permittee has properly notified Ecology of the bypass as required in Special Condition S3.E of this permit.
3. If bypass is anticipated and has the potential to result in noncompliance of this permit.
- a. The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:
    - A description of the bypass and its cause.
    - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
    - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
    - The minimum and maximum duration of bypass under each alternative.
    - A recommendation as to the preferred alternative for conducting the bypass.
    - The projected date of bypass initiation.
    - A statement of compliance with SEPA.
    - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
    - Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

- b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of the engineering report or facilities plan and plans and specifications and must include these to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.
- c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:
  - If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
  - If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
  - If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

## **S5. Solid Waste**

### **S5.A. Solid waste handling**

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water outside the defined Capture Zone.

### **S5.B. Leachate**

The Permittee must not allow leachate from its solid waste material to enter state waters outside the Capture Zone without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause violations of this NPDES Permit, the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC. The

Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters. Plan to be updated as necessary.

#### **S5.C. Solid waste control plan**

##### **a. Submittal Requirements**

The Permittee must:

1. Submit an approved solid waste control plan to Ecology by **September 1, 2014**. The Permittee may submit a solid waste plan that has been approved by another agency as long as it meets the intent of this section.
2. Submit to Ecology any proposed revision or modification of the solid waste control plan for review and approval at least 30 days prior to implementation. The Permittee must submit a paper copy and an electronic copy (as a PDF).
3. Comply with the plan and any modifications.

The Permittee may submit plans and manuals required by other agencies, which meet the intent of this section.

##### **b. Solid waste control plan content**

The solid waste control plan must:

1. Follow Ecology's guidance for preparing a solid waste control plan ([www.ecy.wa.gov/biblio/0710024.html](http://www.ecy.wa.gov/biblio/0710024.html)) and address all solid wastes generated by the permittee.
2. Include at a minimum a description, source, generation rate, and disposal methods of these solid wastes.
3. Not conflict with local or state solid waste regulations.

#### **S6. Adaptive Management Plan**

The Permittee must implement the actions of the approved Adaptive Management Plans for Water Quality. The Permittee must update the Adaptive Management Plan based on the effectiveness of current monitoring procedures and the last 5 years of water quality data and submit a complete, updated and approvable plan to Ecology by **July 1, 2014**.

Submit to Ecology for review and approval substantial changes or updates to the Adaptive Management Plan prior to incorporating them into the manual.

**S7. Development Rock Management Plan (DRMP)**

The Permittee must comply with the approved DRMP and any modifications once approved. The Permittee must submit an annual update of the DRMP **two weeks prior** to the annual meeting held in March of each year.

The Permittee must submit all proposed revisions or modifications to the Development Rock Management Plan or revisions to Ecology and Department of Natural Resources (DNR) for review and written approval at least **60 days prior** to planned implementation. Modifications must be approved in writing from both Ecology and DNR prior to implementation.

**S8. Application for Permit Renewal or Modification for Facility Changes**

The Permittee must submit an application for renewal of this permit by **February 28, 2018**. The Permittee must submit a paper copy and an electronic copy (as a PDF).

The Permittee must also submit a new application or supplement at least **one hundred eighty (180) days** prior to commencement of discharges, resulting from the activities which may result in permit violations. Ecology must approve modifications in writing.

**S9. Facility Loading**

**S9.A. Design criteria**

The flows or waste loads for the permitted MWTP must not exceed the following design criteria:

Maximum Design Flow (GPM)	500 gallons per minute
Peak Instantaneous Design Flow (PIDF)	500 gallons per minute

**S9.B Non-industrial Stormwater Treatment Design criteria**

Storm events that exceed the hydraulic design criteria of non-industrial stormwater treatment systems may bypass the treatment system when Ecology has determined the system meets the permit requirements in Table 4. All bypass requests must be made in writing and approved by Ecology in writing. Ecology does not consider these storm events as exceedances of the established design criteria.

## S10. Engineering Documents

### S10.A. Plans and specifications

The Permittee must prepare and submit two copies of an approvable **Engineering Report** in accordance with chapter 173-240 WAC to Ecology for review and approval prior to MWTP plant modifications that have the potential to change MWTP effluent quality. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

## S11. Compliance Schedule

By the dates tabulated below, the Permittee must complete the following tasks and submit a report describing, at a minimum:

- Whether it completed the task and, if not, the date on which it expects to complete the task.
- The reasons for delay and the steps it is taking to return the project to the established schedule.

	Tasks within SWPPP	Date Due
1.	Submit a flow diagram and map showing segregation of Non-industrial Stormwater and Industrial Stormwater discharges, directing only non-industrial stormwater discharge to Outfall 002d and DA-3.	4/1/2014

	Tasks within AMP	Date Due
1.	Develop a plan and timeline for installation of liners under a majority of PAG ore and PAG development rock stockpiled at the surface of the mine to capture stormwater and interflow groundwater that percolates through the stockpile (AMP App. C).	4/1/2014
2.	Develop a plan and timeline for installation of a liner under all ore stockpiled at the surface of the mine to capture stormwater and interflow groundwater that percolates through the stockpile (AMP, App. C).	12/31/2014
3.	Develop a monitoring plan including timeline for installation of a monitoring system for groundwater (shallow -interflow and deep) outside the perimeter of the Capture Zone in South Fork Bolster Creek (AMP, App. C).	7/1/2014
4.	Permittee shall initiate an analysis for reduction of nitrate in the Mine Water Treatment Plant effluent. Nitrate limit is an interim standard and the final standard will be based on background or on the results of the analysis.	12/31/2014

## **S12. Non-routine and Unanticipated Discharges**

Beginning on **March 1, 2014**, the Permittee is authorized to discharge non-routine wastewater on a case-by-case basis if approved by Ecology. Prior to any such discharge, the Permittee must contact Ecology and at a minimum provide the following information:

- The proposed discharge location(s)
- The nature of the activity that will generate the discharge
- Any alternatives to the discharge, such as reuse, mine storage, or recycling of the water
- The total volume of water it expects to discharge daily and for the duration of the unanticipated discharge
- The results of the chemical analysis of the water
- The date or duration of proposed discharge
- The expected rate of unanticipated discharged, in gallons per minute and maximum anticipated instantaneous measure

The Permittee must also analyze for turbidity above and below the discharge site(s). The analysis must also include any parameter deemed necessary by Ecology. All discharges must comply with the effluent limits as established in Special Condition S1 of this permit, water quality standards, and any other limits imposed by Ecology.

The Permittee must limit the discharge rate, as referenced in subpart 1.g above, so it will not cause erosion of ditches, stream channels or structural damage to culverts and their entrances or exits.

The discharge cannot proceed until Ecology has reviewed the information provided and has authorized the discharge by letter to the Permittee or by an Administrative Order.

## **S13. Spill Control Plan**

### **S13.A. Spill control plan submittals and requirements**

The Permittee must:

- Submit to Ecology an update to the existing spill control plan by **July 1, 2014**. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
- Review the plan at least annually and update the spill plan as needed.
- Send changes to the plan to Ecology.
- Follow the plan and any supplements throughout the term of the permit.



**S13.B. Spill control plan components**

The spill control plan must include the following:

- A list of all oil and petroleum products, blasting agents, brine concentrates generated through water treatment plant operation and other materials used and/or stored on-site, which when spilled, or otherwise released into the environment, designate as Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070. Include other materials used and/or stored on-site which may become pollutants or cause pollution upon reaching state's waters.
- A description of preventive measures and facilities (including an overall facility plot showing drainage patterns) which prevent, contain, or treat spills of these materials.
- A description of the reporting system the Permittee will use to alert responsible managers and legal authorities in the event of a spill.
- A description of operator training to implement the plan.
- The spill control plan must include transportation of all mine products and wastes transported from the Buckhorn Mine to the mill in Republic.

The Permittee may submit plans and manuals required by 40 CFR Part 112, contingency plans required by Chapter 173-303 WAC, or other plans required by other agencies, which meet the intent of this section.

**S14. Mine Site Stormwater Pollution Prevention Plan (Operational SWPPP)**

Permittee is required to use the NRCS Snotel #1159, Gold Axe Camp, for precipitation parameters in calculations.

**S14.A. Plan implementation**

No later than April 1, 2014 the Permittee must submit an updated Operational SWPPP that addresses the area inside the Capture Zone. The plan must segregate industrial stormwater from non-industrial stormwater discharges inside the Capture Zone. The Permittee must incorporate best management practices (BMP's) for stormwater associated with road construction and maintenance within the permit boundary into the Operational SWPPP.

**S14.B. General requirements**

**Retention and availability**

The Operational SWPPP and all of its modifications must be retained on-site or within reasonable access to the site so that it is available for review by inspectors.

**Modifications**

The Operational SWPPP must be evaluated yearly to accommodate changing site conditions.

The Permittee must modify the Operational SWPPP whenever there is a change in design, construction, operation or maintenance which causes the Operational SWPPP to be less effective in controlling the pollutants.

The proposed modifications to the Operational SWPPP must be submitted to Ecology for review and written approval at least 90 days in advance of implementing the proposed changes in the plan unless Ecology approves immediate implementation in writing. The Permittee must provide for implementation of any modifications to the Operational SWPPP in a timely manner.

The Permittee may incorporate applicable portions of plans prepared for other purposes. Plans or portions of plans incorporated into an Operational SWPPP become enforceable requirements of this permit.

**S14.C. Implementation and evaluation.**

The Permittee must evaluate quarterly whether measures to reduce pollutant loadings identified in the Operational SWPPP are adequate and properly implemented in accordance with the terms of the permit or whether additional controls are needed. A record must be maintained summarizing the results of inspections and include a certification that the facility is in compliance with the plan and in compliance with this permit. The record must identify any incidents of noncompliance. The Permittee must conduct inspections weekly during the spring freshet, during rain storms year round and one inspection during the dry season (July – November).

Non-industrial stormwater is to be separated from industrial stormwater inside the Capture Zone. Non-industrial stormwater may be discharged to approved Outfall 002d located outside the Capture Zone. Non industrial stormwater is allowed to be discharged to D-3 inside the Capture Zone. Industrial

stormwater is to be processed through the MWTP for discharge to approved surface water outfall locations.

The wet season inspections must be conducted weekly during the spring freshet and during all rainfall events equal to or greater than 0.5 inches precipitation in a 24 hour period (SNOTEL # 1159).

Inspections are to be conducted by personnel named in the Operational SWPPP. Wet weather inspections must include but not limited to observations of the presence of floating materials, suspended solids, oil and grease, discolorations, turbidity, odor, etc. in the stormwater discharge(s).

Personnel named in the Operational SWPPP must conduct the dry season inspection. The dry season inspection must determine (but not limited to) the presence of unpermitted non-stormwater discharges such as domestic wastewater, noncontact cooling water, or process wastewater (including leachate) to the stormwater drainage system. If an unpermitted, non-stormwater discharge is discovered, the Permittee must immediately identify the source of the discharge, prepare to eliminate the discharge, and notify Ecology.

#### **S15. Outfall and Distribution Line Evaluation**

The Permittee must inspect, monthly from December through July, the surface portion of the outfall lines, distribution boxes and subsurface diffusers to document their integrity and continued function. Inspection is not required of outfalls not discharging, however, inspections must be reinstituted prior to discharge to the outfall. If conditions allow for photographic verification, the Permittee must include such verification in the report. Inspection reports for **December, January, February and March** are due by **April 30th**, reports for **April, May, June and July** are due by **August 30th**. The Permittee must submit the inspection report to Ecology. A report is not required for the August through November period.

The inspector must at minimum:

1. Assess the physical condition of the outfall pipes, distribution boxes, diffusers, and associated couplings.
2. Determine the extent of sediment accumulation or removal in the vicinity of the diffusers.
3. Ensure diffuser ports are free of obstructions and are allowing uniform flow.
4. Confirm physical location (latitude/longitude) of the diffuser section of each outfall if present.
5. Maintain required turbidity monitoring above and below outfalls to surface waters.

6. Assess physical condition of the surface and subsurface lines, including surface side laterals.
7. Assess physical condition of anchors used to secure the discharge line(s).

## **S16. Hydrologic Monitoring Plan**

No later than **July 1, 2014**, the Permittee must review, update, and submit to Ecology the Hydrologic Monitoring Plan. The plan may be modified subsequent to the effective date of the permit. Any modifications to the plan must not take effect until reviewed and approved in writing by Ecology. If closure of the mine occurs during this NPDES permit cycle, the Permittee must submit a plan for operating the MWTP during the rehabilitation and post closure phase to Ecology 90 days prior to closure.

The intent and purpose of the Hydrologic Plan (HMP) is to describe the monitoring of the mitigation activities and schedules in sufficient detail to document the monitoring objective, procedures and schedules of mitigation activities associated with the aquatic resources mitigation plan (that addresses Project water rights) and compliance with NPDES and other agency permits. The update must include known impacts, including Capture Zone integrity, identified through information and data gathered during the first 5-year NPDES Permit cycle.

## **S17. Acute Toxicity**

### **S17.A. Effluent characterization**

The Permittee must:

1. Conduct quarterly acute toxicity testing on the final effluent for one year starting in the **1st Quarter 2014**. Quarters means January through March, April through June, July through September, and October through December.
2. Submit a quarterly written report to Ecology for one year within 30 days of sampling and starting no later than **April 30, 2014**. Each subsequent report is due on April 30<sup>th</sup>, July 30<sup>th</sup>, October 30<sup>th</sup>, and January 31<sup>st</sup> of each year. Further instructions on testing conditions and test report content are in Section F below.
3. Use a dilution series consisting of a minimum of five concentrations and a control. The five concentrations should include the ACEC of 100% effluent.
4. Conduct the following two acute toxicity tests on each sample:
  - a. WET Testing Acute Toxicity – No mixing zone; ACEC = 100% effluent.

Acute Toxicity Tests	Species	Method
Rainbow trout 96-hour static-renewal test	<i>Oncorhynchus mykiss</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

5. The effluent limit for acute toxicity listed in Section B below applies if after one year of effluent characterization:

- The median survival of any species in 100% effluent is below 80%.
- Any one test of any species exhibits less than 65% survival in 100% effluent.

If the limit applies, then the Permittee must immediately follow the instructions in Sections B, C, D, E, and F.

**S17.B. Effluent limit for acute toxicity**

The effluent limit for acute toxicity is: No statistically significant toxicity at the ACEC, as there is no mixing zone permitted.

**S17.C. Compliance with the effluent limit for acute toxicity**

Compliance with the effluent limit for acute toxicity means the results of the testing specified in Section D show no statistically significant difference in survival between the control and the ACEC.

If the test results show a statistically significant difference in survival between the control and the ACEC, the test does not comply with the effluent limit for acute toxicity. The Permittee must then immediately conduct the additional testing described in Section E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

**S17.D. Compliance testing for acute toxicity**

The Permittee must:

1. Perform the acute toxicity tests with 100% effluent, the ACEC, and a control, within a full dilution series of 5 effluent concentrations. Effluent

is to be collected in the MWTP prior to or at the Outfall manifold. Conduct quarterly acute toxicity testing on the final effluent for one year starting in the 1<sup>st</sup> Quarter 2014. Quarters means January through March, April through June, July through September, and October through December. Testing must begin by March 31, 2015.

2. Submit a quarterly written report to Ecology for one year within 30 days of sampling starting no later than **March 31<sup>st</sup>**. Each subsequent report is due on **April 30<sup>th</sup>, July 30<sup>th</sup>, October 30<sup>th</sup>, and January 30<sup>th</sup>** of each year. Further instructions on testing conditions and test report content are in Section F below.
3. The Permittee must perform compliance tests using each of the species and protocols listed below on a rotating basis:

Acute Toxicity Tests	Species	Method
Rainbow trout 96-hour static-renewal test	<i>Oncorhynchus mykiss</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

**S17.E. Response to noncompliance with the effluent limit for acute toxicity**

If a toxicity test conducted under Section D determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Subsection C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct one additional test each week for four consecutive weeks, using the same test and species as the failed compliance test.
2. Test at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the ACEC. The results of the test at the ACEC will determine compliance with the effluent limit for acute toxicity as described in Section C.
3. Return to the original monitoring frequency in Subsection D after completion of the additional compliance monitoring.

**Anomalous test results:** If a toxicity test conducted under Subsection D indicates noncompliance with the acute toxicity limit and the Permittee believes that the test result is anomalous. The Permittee should conduct one additional test then wait for notification from Ecology before completing the additional testing required above. The Permittee must submit the notification with the

report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional test fails to comply with the effluent limit for acute toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring.

This report must be based upon a review of all pertinent and recent facility records, including:

1. Operating records
2. Monitoring results
3. Inspection records
4. Spill reports
5. Weather records
6. Production records
7. Raw material purchases
8. Pretreatment records, etc.

If any toxicity test conducted under Subsection D.1-3 determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Subsection B, then the test result is a violation of the acute limit.

**S17.F. Sampling and reporting requirements**

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

2. The Permittee must collect grab samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Subsection C and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Section A. The permittee will take a background water sample at SW-7 to match hardness of the effluent sample and laboratory dilution water..
6. The Permittee may sample receiving water at the same time as the effluent and instruct the lab to measure the hardness of both and increase the hardness of the effluent sample to match the hardness of the receiving water sample prior to beginning the toxicity test. Otherwise, the Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
  - a. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the acute critical effluent concentration (ACEC). The ACEC equals 100% effluent.
  - b. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing must comply with the acute statistical power standard of 29% as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

## **S18. Chronic Toxicity**

### **S18.A. Effluent characterization**

The Permittee must:



Conduct quarterly chronic toxicity testing on the final effluent for one year starting in the 1st Quarter 2014. Quarters means January through March, April through June, July through September, and October through December.

1. Submit a quarterly written report to Ecology for one year within 30 days of sampling and starting no later than March 31, 2014. Each subsequent report is due on April 30<sup>th</sup>, July 30<sup>th</sup>, October 30<sup>th</sup>, and January 30<sup>th</sup> of each year. Further instructions on testing conditions and test report content are in Section F below.
2. Conduct chronic toxicity testing during effluent characterization on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 100% effluent. The CCEC equals the ACEC.
3. Conduct the following three chronic toxicity tests on each sample:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	<i>Pimephales promelas</i>	EPA-821-R-02-013
Water flea survival and reproduction	<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013
Alga	<i>Pseudokirchneriella subcapitata</i> (formerly <i>Selenastrum capricornutum</i> )	EPA-821-R-02-013

**S18.B. Effluent limit for chronic toxicity**

The effluent limit for chronic toxicity is:

No toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC).

The CCEC means the maximum concentration of effluent during critical conditions, defined in Section S16 of this permit. The CCEC equals 100% effluent.

**S18.C. Compliance with the effluent limit for chronic toxicity**

Compliance with the effluent limit for chronic toxicity means the results of the testing specified in Subsection D. show no statistically significant difference in response between the control and the CCEC.

If the test results show a statistically significant difference in response between the control and the CCEC, the test does not comply with the effluent limit for chronic toxicity. The Permittee must then immediately conduct the additional testing described in Subsection E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in response between the control and the CCEC is less than 20%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

Ecology will reevaluate the need for the chronic toxicity limit in future permits.

Therefore, the Permittee must also conduct this same hypothesis test (Appendix H, EPA/600/4-89/001) to determine whether a statistically significant difference in response exists between the acute critical effluent concentration (ACEC) and the control.

**S18.D. Compliance testing for chronic toxicity**

The Permittee must:

1. Perform the chronic toxicity tests using the CCEC, the ACEC, and a control, or with a full dilution series.
2. Conduct quarterly chronic toxicity testing on the final effluent for one year starting in the 1st Quarter of 2014. Quarters means January through March, April through June, July through September, and October through December. Effluent is to be collected in the MWTP prior to the outfall manifold.
3. Submit a quarterly written report to Ecology for one year within 30 days of sampling and starting no later than April 30<sup>th</sup>. Each subsequent report is due on April 30<sup>th</sup>, July 30<sup>th</sup>, October 30<sup>th</sup> and January 30<sup>th</sup> each year. Further instructions on testing conditions and test report content are in Section F below.
4. Perform compliance tests using the following species on a rotating basis and the most recent version of the following protocols:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	<i>Pimephales promelas</i>	EPA-821-R-02-013
Water flea survival and reproduction	<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013
Alga	<i>Pseudokirchneriella subcapitata</i> (formerly <i>Selenastrum capricornutum</i> )	EPA-821-R-02-013

**S18.E. Response to noncompliance with the effluent limit for chronic toxicity**

If a toxicity test conducted under Subsection D determines a statistically significant difference in response between the CCEC and the control using the statistical test described in Subsection C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct additional testing each month for three consecutive months using the same test and species as the failed compliance test.
2. Use a series of at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the CCEC. The results of the test at the CCEC will determine compliance with the effluent limit for chronic toxicity as described in Subsection B.
3. Return to the original monitoring frequency in Subsection C after completion of the additional compliance monitoring.

**Anomalous test results:** If a toxicity test conducted under Subsection D indicates noncompliance with the chronic toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for chronic toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing required by this section complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

1. Operating records
2. Monitoring results
3. Inspection records
4. Spill reports
5. Weather records
6. Production records
7. Raw material purchases
8. Pretreatment records, etc.

If the additional testing required by this section shows another violation of the chronic toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within 60 days after the sample date (WAC 173-205-100(2)).

**S18.F. Sampling and reporting requirements**

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.
2. The Permittee must collect grab samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Section C. and the Ecology Publication no. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Subsection C. The permittee will take a background water sample at SW-7 to match hardness of the effluent sample and laboratory dilution water

6. The Permittee may sample receiving water at the same time as the effluent and instruct the lab to measure the hardness of both and increase the hardness of the effluent sample to match the hardness of the receiving water sample prior to beginning the toxicity test. Otherwise, the Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the CCEC and the ACEC. The CCEC and the ACEC may either substitute for the effluent concentrations that are closest to them in the dilution series or be extra effluent concentrations. The CCEC equals 100% effluent. The ACEC equals 100% effluent.
8. All whole effluent toxicity tests that involve hypothesis testing must comply with the chronic statistical power standard of 39% as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

#### **S19. Environmental Protection Performance Security (EPPS)**

The Permittee must maintain adequate performance security for environmental protection (RCW 78.56.110). No later than **October 31, 2014** and every two (2) years thereafter, the Permittee must determine the adequacy of the EPPS and submit documentation to Ecology for review and approval. If Ecology determines that additional performance security is required, Ecology will notify the Permittee in writing, including a statement of the amount of additional performance security. The Permittee must submit the required performance security in a form acceptable to Ecology within 90 days of receipt of the notice.

#### **S20. Brine Management Plan**

The Permittee must prepare and submit a Brine Management Plan to Ecology by **November 1, 2014**. The Permittee must review and update the Brine Management Plan annually. Any modifications to the plan must not take effect until reviewed and approved by Ecology in writing.

#### **S21. Mine Closure Hydrologic Reclamation Plan**

The Permittee must notify Ecology in writing of the intent to close the mine a minimum of **90 days prior to the closure date**.

## General Conditions

### G1. Signatory requirements

1. All applications, reports, or information submitted to Ecology must be signed and certified.
  - a. In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
    - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
    - In the case of a partnership, by a general partner.
    - In the case of sole proprietorship, by the proprietor.
    - In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

2. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described above and submitted to Ecology.
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to authorization. If an authorization under paragraph G1.2, above, is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G1.2, above, must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section must make the following certification:

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

## **G2. Right of inspection and entry**

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

## **G3. Permit actions**

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon Ecology's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
  - a. Violation of any permit term or condition.

- b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
  - c. A material change in quantity or type of waste disposal.
  - d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.
  - e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.
  - f. Nonpayment of fees assessed pursuant to RCW 90.48.465.
  - g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:
- a. A material change in the condition of the waters of the state.
  - b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
  - c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
  - d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
  - e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
  - f. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
  - g. Incorporation of an approved local pretreatment program into a municipality's permit.
3. The following are causes for modification or alternatively revocation and reissuance:
- a. When cause exists for termination for reasons listed in 1.a through 1.g of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
  - b. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

#### **G4. Reporting planned changes**

The Permittee must, as soon as possible, but no later than one hundred eighty (180) days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

- 1. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b)
- 2. A significant change in the nature or an increase in quantity of pollutants discharged.



3. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

#### **G5. Plan review required**

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

#### **G6. Compliance with other laws and statutes**

Nothing in this permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

#### **G7. Transfer of this permit**

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

##### **1. Transfers by Modification**

Except as provided in paragraph (2) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

##### **2. Automatic Transfers**

This permit may be automatically transferred to a new Permittee if:

- a. The Permittee notifies Ecology at least thirty (30) days in advance of the proposed transfer date.
- b. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.

- c. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

#### **G8. Reduced production for compliance**

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

#### **G9. Removed substances**

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

#### **G10. Duty to provide information**

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

#### **G11. Other requirements of 40 CFR**

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

#### **G12. Additional monitoring**

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

#### **G13. Payment of fees**

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.

#### **G14. Penalties for violating permit conditions**

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is deemed to be a separate and distinct violation.

#### **G15. Upset**

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset.
2. The permitted facility was being properly operated at the time of the upset.
3. The Permittee submitted notice of the upset as required in Special Condition S3.E.
4. The Permittee complied with any remedial measures required under S3.E of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

#### **G16. Property rights**

This permit does not convey any property rights of any sort, or any exclusive privilege.

#### **G17. Duty to comply**

The Permittee must comply with all conditions of this permit. Any permit noncompliance

constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

#### **G18. Toxic pollutants**

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

#### **G19. Penalties for tampering**

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

#### **G20. Reporting requirements applicable to existing manufacturing, commercial, mining, and silvicultural dischargers**

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify Ecology as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
  - a. One hundred micrograms per liter (100 µg/L).
  - b. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
  - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  - d. The level established by the Director in accordance with 40 CFR 122.44(f).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
  - a. Five hundred micrograms per liter (500 µg/L).

- b. One milligram per liter (1 mg/L) for antimony.
- c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
- d. The level established by the Director in accordance with 40 CFR 122.44(f).

#### **G21. Compliance schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than fourteen (14) days following each schedule date.

## Appendix A

### LIST OF POLLUTANTS WITH ANALYTICAL METHODS, DETECTION LIMITS AND QUANTITATION LEVELS

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and application required monitoring unless:

1. Another permit condition specifies other methods, detection levels, or quantitation levels.
2. The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136.

If the Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology's Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix A that did not increase the overall cost of analysis unreasonably.

Ecology added this appendix to the permit in order to reduce the number of analytical "non-detects" in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
Biochemical Oxygen Demand	SM5210-B		2 mg/L
Soluble Biochemical Oxygen Demand	SM5210-B <sup>3</sup>		2 mg/L
Chemical Oxygen Demand	SM5220-D		10 mg/L
Total Organic Carbon	SM5310-B/C/D		1 mg/L
Total Suspended Solids	SM2540-D		5 mg/L
Total Ammonia (as N)	SM4500-NH3-B and C/D/E/G/H		20
Flow	Calibrated device		
Dissolved oxygen	SM4500-OC/OG		0.2 mg/L
Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
pH	SM4500-H <sup>+</sup> B	N/A	N/A

### NONCONVENTIONAL PARAMETERS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
Total Alkalinity	SM2320-B		5 mg/L as CaCO <sub>3</sub>
Chlorine, Total Residual	SM4500 Cl G		50.0
Color	SM2120 B/C/E		10 color units
Fecal Coliform	SM 9221E, 9222	N/A	Specified in method - sample aliquot dependent
Fluoride (16984-48-8)	SM4500-F E	25	100
Nitrate + Nitrite Nitrogen (as N)	SM4500-NO <sub>3</sub> - E/F/H		100
Nitrogen, Total Kjeldahl (as N)	SM4500-N <sub>org</sub> B/C and SM4500NH <sub>3</sub> -B/C/D/EF/G/H		300
Soluble Reactive Phosphorus (as P)	SM4500- PE/PF	3	10
Phosphorus, Total (as P)	SM 4500 PB followed by SM4500-PE/PF	3	10
Oil and Grease (HEM)	1664 A or B	1,400	5,000
Salinity	SM2520-B		3 practical salinity units or scale (PSU or PSS)
Settleable Solids	SM2540 -F		100
Sulfate (as mg/L SO <sub>4</sub> )	SM4110-B		200
Sulfide (as mg/L S)	SM4500-S <sup>2</sup> F/D/E/G		200
Sulfite (as mg/L SO <sub>3</sub> )	SM4500-SO <sub>3</sub> B		2000
Total Coliform	SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
Total dissolved solids	SM2540 C		20 mg/L
Total Hardness	SM2340B		200 as CaCO <sub>3</sub>
Aluminum, Total (7429-90-5)	200.8	2.0	10
Barium Total (7440-39-3)	200.8	0.5	2.0
BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes)	EPA SW 846 8021/8260	1	2
Boron Total (7440-42-8)	200.8	2.0	10.0
Cobalt, Total (7440-48-4)	200.8	0.05	0.25
Iron, Total (7439-89-6)	200.7	12.5	50

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
Magnesium, Total (7439-95-4)	200.7	10	50
Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
Manganese, Total (7439-96-5)	200.8	0.1	0.5
NWTPH Dx <sup>4</sup>	Ecology NWTPH Dx	250	250
NWTPH Gx <sup>5</sup>	Ecology NWTPH Gx	250	250
Tin, Total (7440-31-5)	200.8	0.3	1.5
Titanium, Total (7440-32-6)	200.8	0.5	2.5

### PRIORITY POLLUTANTS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>METALS, CYANIDE &amp; TOTAL PHENOLS</b>			
Antimony, Total (7440-36-0)	200.8	0.3	1.0
Arsenic, Total (7440-38-2)	200.8	0.1	0.5
Beryllium, Total (7440-41-7)	200.8	0.1	0.5
Cadmium, Total (7440-43-9)	200.8	0.05	0.25
Chromium (hex) dissolved (18540-29-9)	SM3500-Cr EC	0.3	1.2
Chromium, Total (7440-47-3)	200.8	0.2	1.0
Copper, Total (7440-50-8)	200.8	0.4	2.0
Lead, Total (7439-92-1)	200.8	0.1	0.5
Mercury, Total (7439-97-6)	1631E	0.0002	0.0005
Nickel, Total (7440-02-0)	200.8	0.1	0.5
Selenium, Total (7782-49-2)	200.8	1.0	1.0
Silver, Total (7440-22-4)	200.8	0.04	0.2
Thallium, Total (7440-28-0)	200.8	0.09	0.36
Zinc, Total (7440-66-6)	200.8	0.5	2.5
Cyanide, Total (57-12-5)	335.4	5	10
Cyanide, Weak Acid Dissociable	SM4500-CN I	5	10
Cyanide, Free Amenable to Chlorination (Available Cyanide)	SM4500-CN G	5	10
Phenols, Total	EPA 420.1		50



Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>ACID COMPOUNDS</b>			
2-Chlorophenol (95-57-8)	625	1.0	2.0
2,4-Dichlorophenol (120-83-2)	625	0.5	1.0
2,4-Dimethylphenol (105-67-9)	625	0.5	1.0
4,6-dinitro-o-cresol (534-52-1) (2-methyl-4,6-dinitrophenol)	625/1625B	1.0	2.0
2,4 dinitrophenol (51-28-5)	625	1.0	2.0
2-Nitrophenol (88-75-5)	625	0.5	1.0
4-nitrophenol (100-02-7)	625	0.5	1.0
Parachlorometa cresol (59-50-7) (4-chloro-3-methylphenol)	625	1.0	2.0
Pentachlorophenol (87-86-5)	625	0.5	1.0
Phenol (108-95-2)	625	2.0	4.0
2,4,6-Trichlorophenol (88-06-2)	625	2.0	4.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>VOLATILE COMPOUNDS</b>			
Acrolein (107-02-8)	624	5	10
Acrylonitrile (107-13-1)	624	1.0	2.0
Benzene (71-43-2)	624	1.0	2.0
Bromoform (75-25-2)	624	1.0	2.0
Carbon tetrachloride (56-23-5)	624/601 or SM6230B	1.0	2.0
Chlorobenzene (108-90-7)	624	1.0	2.0
Chloroethane (75-00-3)	624/601	1.0	2.0
2-Chloroethylvinyl Ether (110-75-8)	624	1.0	2.0
Chloroform (67-66-3)	624 or SM6210B	1.0	2.0
Dibromochloromethane (124-48-1)	624	1.0	2.0
1,2-Dichlorobenzene (95-50-1)	624	1.9	7.6
1,3-Dichlorobenzene (541-73-1)	624	1.9	7.6
1,4-Dichlorobenzene (106-46-7)	624	4.4	17.6
Dichlorobromomethane (75-27-4)	624	1.0	2.0
1,1-Dichloroethane (75-34-3)	624	1.0	2.0
1,2-Dichloroethane (107-06-2)	624	1.0	2.0
1,1-Dichloroethylene (75-35-4)	624	1.0	2.0
1,2-Dichloropropane (78-87-5)	624	1.0	2.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>VOLATILE COMPOUNDS</b>			
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-6) <sup>6</sup>	624	1.0	2.0
Ethylbenzene (100-41-4)	624	1.0	2.0
Methyl bromide (74-83-9) (Bromomethane)	624/601	5.0	10.0
Methyl chloride (74-87-3) (Chloromethane)	624	1.0	2.0
Methylene chloride (75-09-2)	624	5.0	10.0
1,1,2,2-Tetrachloroethane (79-34-5)	624	1.9	2.0
Tetrachloroethylene (127-18-4)	624	1.0	2.0
Toluene (108-88-3)	624	1.0	2.0
1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride)	624	1.0	2.0
1,1,1-Trichloroethane (71-55-6)	624	1.0	2.0
1,1,2-Trichloroethane (79-00-5)	624	1.0	2.0
Trichloroethylene (79-01-6)	624	1.0	2.0
Vinyl chloride (75-01-4)	624/SM6200B	1.0	2.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>BASE/NEUTRAL COMPOUNDS</b> (compounds in bold are Ecology PBTs)			
Acenaphthene (83-32-9)	625	0.2	0.4
Acenaphthylene (208-96-8)	625	0.3	0.6
Anthracene (120-12-7)	625	0.3	0.6
Benzidine (92-87-5)	625	12	24
Benzyl butyl phthalate (85-68-7)	625	0.3	0.6
Benzo(a)anthracene (56-55-3)	625	0.3	0.6
Benzo(b)fluoranthene (3,4-benzofluoranthene) (205-99-2) <sup>7</sup>	610/625	0.8	1.6
Benzo(j)fluoranthene(205-82-3) <sup>7</sup>	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) (207-08-9) <sup>7</sup>	610/625	0.8	1.6
Benzo(r,s,t)pentaphene (189-55-9)	625	0.5	1.0
Benzo(a)pyrene (50-32-8)	610/625	0.5	1.0
Benzo(ghi)Perylene (191-24-2)	610/625	0.5	1.0
Bis(2-chloroethoxy)methane (111-91-1)	625	5.3	21.2

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>BASE/NEUTRAL COMPOUNDS</b> (compounds in bold are Ecology PBTs)			
Bis(2-chloroethyl)ether (111-44-4)	611/625	0.3	1.0
Bis(2-chloroisopropyl)ether (39638-32-9)	625	0.3	0.6
Bis(2-ethylhexyl)phthalate (117-81-7)	625	0.1	0.5
4-Bromophenyl phenyl ether (101-55-3)	625	0.2	0.4
2-Chloronaphthalene (91-58-7)	625	0.3	0.6
4-Chlorophenyl phenyl ether (7005-72-3)	625	0.3	0.5
Chrysene (218-01-9)	610/625	0.3	0.6
Dibenzo (a,h)acridine (226-36-8)	610M/625M	2.5	10.0
Dibenzo (a,j)acridine (224-42-0)	610M/625M	2.5	10.0
Dibenzo(a,h)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)	625	0.8	1.6
Dibenzo(a,e)pyrene (192-65-4)	610M/625M	2.5	10.0
Dibenzo(a,h)pyrene (189-64-0)	625M	2.5	10.0
3,3-Dichlorobenzidine (91-94-1)	605/625	0.5	1.0
Diethyl phthalate (84-66-2)	625	1.9	7.6
Dimethyl phthalate (131-11-3)	625	1.6	6.4
Di-n-butyl phthalate (84-74-2)	625	0.5	1.0
2,4-dinitrotoluene (121-14-2)	609/625	0.2	0.4
2,6-dinitrotoluene (606-20-2)	609/625	0.2	0.4
Di-n-octyl phthalate (117-84-0)	625	0.3	0.6
1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	1625B	5.0	20
Fluoranthene (206-44-0)	625	0.3	0.6
Fluorene (86-73-7)	625	0.3	0.6
Hexachlorobenzene (118-74-1)	612/625	0.3	0.6
Hexachlorobutadiene (87-68-3)	625	0.5	1.0
Hexachlorocyclopentadiene (77-47-4)	1625B/625	0.5	1.0
Hexachloroethane (67-72-1)	625	0.5	1.0
Indeno(1,2,3-cd)Pyrene (193-39-5)	610/625	0.5	1.0
Isophorone (78-59-1)	625	0.5	1.0
3-Methyl cholanthrene (56-49-5)	625	2.0	8.0
Naphthalene (91-20-3)	625	0.3	0.6
Nitrobenzene (98-95-3)	625	0.5	1.0
N-Nitrosodimethylamine (62-75-9)	607/625	2.0	4.0
N-Nitrosodi-n-propylamine (621-64-7)	607/625	0.5	1.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>BASE/NEUTRAL COMPOUNDS</b> (compounds in bold are Ecology PBTs)			
N-Nitrosodiphenylamine (86-30-6)	625	0.5	1.0
<b>Perylene (198-55-0)</b>	625	1.9	7.6
Phenanthrene (85-01-8)	625	0.3	0.6
Pyrene (129-00-0)	625	0.3	0.6
1,2,4-Trichlorobenzene (120-82-1)	625	0.3	0.6

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>DIOXIN</b>			
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16) (2,3,7,8 TCDD)	1613B	1.3 pg/L	5 pg/L

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>PESTICIDES/PCBS</b>			
Aldrin (309-00-2)	608	0.025	0.05
alpha-BHC (319-84-6)	608	0.025	0.05
beta-BHC (319-85-7)	608	0.025	0.05
gamma-BHC (58-89-9)	608	0.025	0.05
delta-BHC (319-86-8)	608	0.025	0.05
Chlordane (57-74-9) <sup>8</sup>	608	0.025	0.05
4,4'-DDT (50-29-3)	608	0.025	0.05
4,4'-DDE (72-55-9)	608	0.025	0.05 <sup>10</sup>
4,4' DDD (72-54-8)	608	0.025	0.05
Dieldrin (60-57-1)	608	0.025	0.05
alpha-Endosulfan (959-98-8)	608	0.025	0.05
beta-Endosulfan (33213-65-9)	608	0.025	0.05
Endosulfan Sulfate (1031-07-8)	608	0.025	0.05
Endrin (72-20-8)	608	0.025	0.05
Endrin Aldehyde (7421-93-4)	608	0.025	0.05
Heptachlor (76-44-8)	608	0.025	0.05
Heptachlor Epoxide (1024-57-3)	608	0.025	0.05
PCB-1242 (53469-21-9) <sup>9</sup>	608	0.25	0.5
PCB-1254 (11097-69-1)	608	0.25	0.5
PCB-1221 (11104-28-2)	608	0.25	0.5
PCB-1232 (11141-16-5)	608	0.25	0.5

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>PESTICIDES/PCBs</b>			
PCB-1248 (12672-29-6)	608	0.25	0.5
PCB-1260 (11096-82-5)	608	0.13	0.5
PCB-1016 (12674-11-2) <sup>3</sup>	608	0.13	0.5
Toxaphene (8001-35-2)	608	0.24	0.5



1. Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.
2. Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to  $(1, 2, \text{ or } 5) \times 10^n$ , where n is an integer. (64 FR 30417).  
ALSO GIVEN AS:  
The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).
3. Soluble Biochemical Oxygen Demand method note: First, filter the sample through a Millipore Nylon filter (or equivalent) - pore size of 0.45-0.50 µm (prep all filters by filtering 250 ml of laboratory grade deionized water through the filter and discard). Then, analyze sample as per method 5210-B.
4. NWTPH Dx - Northwest Total Petroleum Hydrocarbons Diesel Extended Range – see <http://www.ecy.wa.gov/biblio/97602.html>
5. NWTPPH Gx - Northwest Total Petroleum Hydrocarbons Gasoline Extended Range – see <http://www.ecy.wa.gov/biblio/97602.html>
6. 1, 3-dichloropropylene (mixed isomers) You may report this parameter as two separate parameters: cis-1, 3-dichloropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).
7. Total Benzo(a)fluoranthenes - Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzo(a)fluoranthenes.
8. Chlordane – You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 0.025/0.050.
9. PCB 1016 & PCB 1242 – You may report these two PCB compounds as one parameter called PCB 1016/1242.

# Buckhorn WA0052434 Capture Zone Map Comparison



0 500 1,000 2,000 Feet

## Legend

-  2014 Capture Zone
-  2006 FSEIS Capture Zone







Map by Washington State Department of Ecology 2014

Buckhorn WA0052434  
Capture Zone Map Detail



### Legend

-  2014 Capture Zone
-  Outfall Locations
-  Gold Bowl Surface Water Monitoring Stations
-  Monitoring Wells

0      355      710      1,420 Feet



Map by Washington State Department of Ecology, 2014

## **Appendix C**

Locations of Groundwater Monitoring Wells

Locations of Piezometer Wells

Locations of Surface Water Monitoring Sites

Locations of Seeps and Springs

Location of Permitted Outfalls






Interflow Well	IW-12 (SDW-12)	48.95092	-118.97977
Monitoring Well	MW-1	48.93530	-118.97150
Monitoring Well	MW-2R	48.94923	-118.97774
Monitoring Well	MW-3	48.94930	-118.96967
Monitoring Well	MW-4	48.94796	-118.96145
Monitoring Well	MW-6R	48.95055	-118.98058
Monitoring Well	MW-7	48.94713	-118.96802
Monitoring Well	MW-9	48.94532	-118.97099
Monitoring Well	MW-11	48.93778	-118.97871
Monitoring Well	MW-12	48.93903	-118.97865
Monitoring Well	MW-13	48.94908	-118.96720
Monitoring Well	MW-14	48.94997	-118.97737
Monitoring Well	MW-15	48.94714	-118.97979
Monitoring Well	MW-16	48.94528	-118.98097
Monitoring Well	MW-17	48.94764	-118.98076
Monitoring Well	MW-18	48.94916*	-118.98996*

\*Approximate latitude and longitude

## Buckhorn WA0052434 Groundwater Monitoring Locations



### LEGEND

-  Monitoring Well
-  Dewatering Well - Shallow
-  2014 NPDES Permit Capture Zone

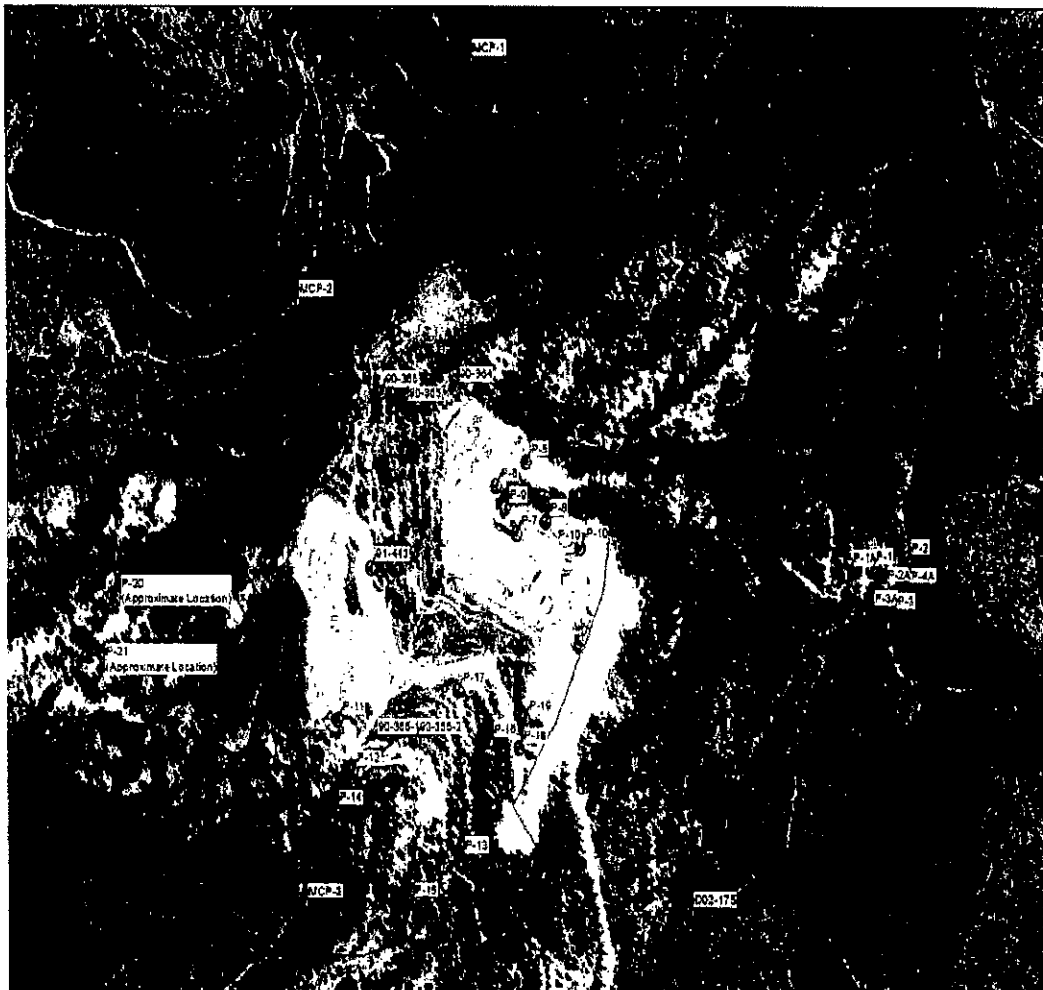
0 1000  
Scale in Feet

Map Projection:  
WA State Plane  
North Zone NAD 1983

Source: Ecology, ESRI,  
Golder Associates Inc.

Piezometer Coordinates (referenced to NAD 83) Decimal Degrees				
Type	ID	Latitude	Longitude	Note
Piezometer	90-355-1	48.947270	-118.984385	Upper piezometer
Piezometer	90-355-2	48.947270	-118.984385	Lower piezometer
Piezometer	90-364	48.953324	-118.982783	
Piezometer	90-365	48.953282	-118.984475	
Piezometer	90-366	48.953292	-118.985251	
Piezometer	91-443	48.950285	-118.985706	
Piezometer	D02-175	48.944148	-118.975551	
Piezometer	P-1	48.950019	-118.969373	
Piezometer	P-1a	48.949989	-118.969367	
Piezometer	P-2	48.950158	-118.968197	
Piezometer	P-2a	48.950197	-118.968199	
Piezometer	P-3	48.949241	-118.968693	
Piezometer	P-3a	48.949274	-118.968677	
Piezometer	P-4a	48.949676	-118.968248	
Piezometer	P-5	48.952013	-118.980493	
Piezometer	P-6	48.951608	-118.981507	
Piezometer	P-7	48.950788	-118.980875	
Piezometer	P-8	48.950982	-118.979904	
Piezometer	P-9	48.951231	-118.981223	
Piezometer	P-10	48.950525	-118.978787	
Piezometer	P-10s	48.950520	-118.978815	Location estimated based on proximity to P-10
Piezometer	P-11	48.947661	-118.986902	
Piezometer	P-12r	48.946754	-118.986471	
Piezometer	P-13	48.945191	-118.982881	
Piezometer	P-14	48.946083	-118.987079	
Piezometer	P-15	48.944446	-118.984673	
Piezometer	P-16	48.947189	-118.981948	
Piezometer	P-17	48.948102	-118.982923	
Piezometer	P-18	48.947066	-118.980954	
Piezometer	P-19	48.947598	-118.980756	
Piezometer	MCP-1	48.958973	-118.982106	
Piezometer	MCP-2	48.954885	-118.987990	
Piezometer	MCP-3	48.944478	-118.988166	
Piezometer	MCP-4	48.931644	-118.998194	
Piezometer	P-20	48.949386	-118.989688	Location estimated
Piezometer	P-21	48.949110	-118.990079	Location estimated

## Buckhorn WA0052434 Piezometer Location Map



### LEGEND

- Piezometer
- 2014 NPDES Permit Capture Zone

0 750  
Scale in Feet

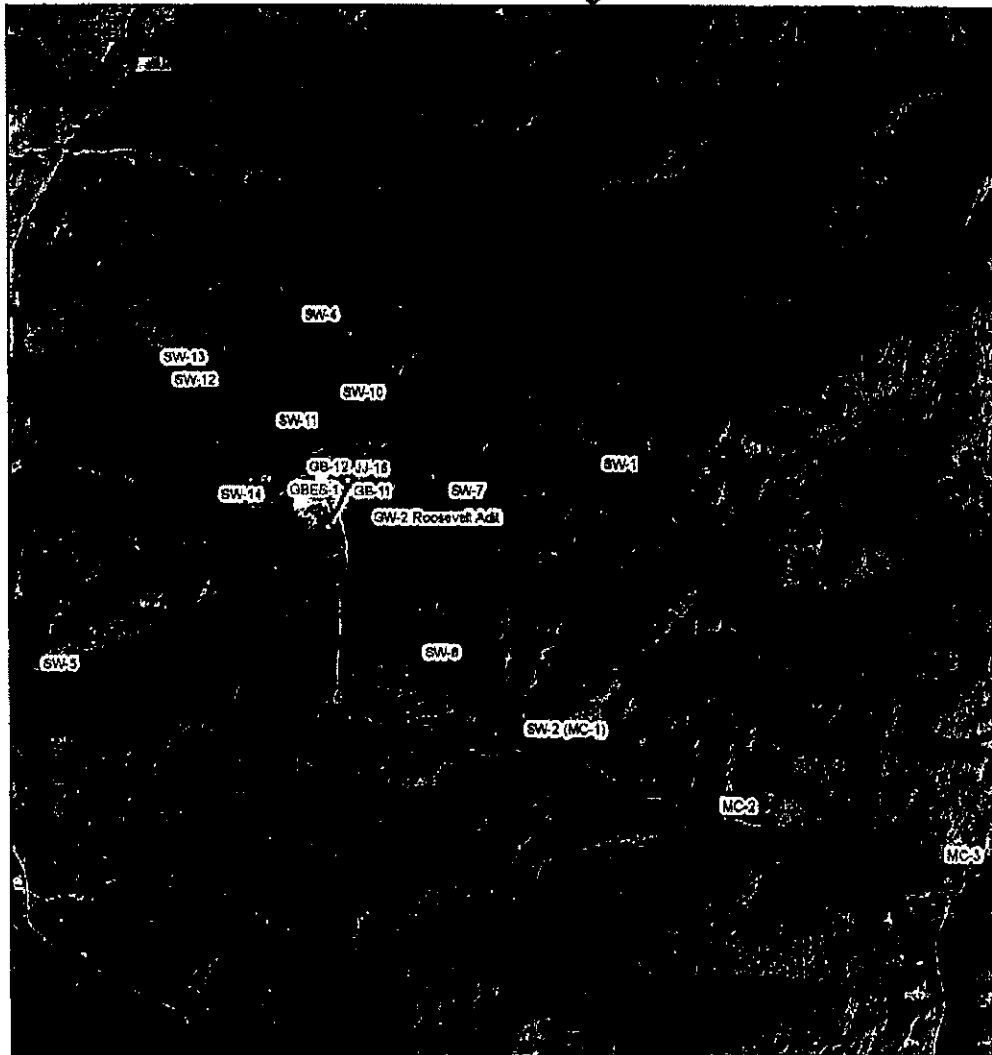
Map Projection:  
WA State Plane  
North Zone NAD 1983

Source: Ecology, ESRI,  
Golder Associates Inc.




Surface water monitoring coordinates (referenced in NAD 83) Decimal Degrees.

Type	ID	Latitude	Longitude
Surface Water	GW-2	48.94515	-118.97475
Surface Water	LandslideToe	48.94992	-118.97450
Surface Water	SW-1	48.95095	-118.93232
Surface Water	SW-2	48.91948	-118.94776
Surface Water	SW-4	48.96934	-118.98669
Surface Water	SW-5	48.92831	-119.03603
Surface Water	SW-7	48.94811	-118.96049
Surface Water	SW-8	48.92893	-118.96592
Surface Water	SW-9A	48.94959	-118.97323
Surface Water	SW-10	48.96004	-118.97990
Surface Water	SW-11	48.95676	-118.99152
Surface Water	SW-12	48.96580	-119.01082
Surface Water	SW-13	48.96456	-119.01283
Surface Water	SW-14	48.94812	-119.00296
Surface Water - Haul Road	MC-1	48.91948	-118.94776
Surface Water - Haul Road	MC-2	48.90996	-118.91240
Surface Water - Haul Road	MC-3	48.90428	-118.86942

Buckhorn WA0052434  
Surface Water Monitoring Stations



**Legend**

-  2014 Capture Zone
-  Surface Water Monitoring Locations
-  Gold Bowl Surface Water Monitoring Stations

0 3,250 6,500 13,000 Feet

Map by Washington State Department of Ecology, February 1, 2014

Seep and Spring coordinates (referenced in NAD 83) Decimal Degrees

Type	ID	Latitude	Longitude
Seep/Spring	GB-11	48.95121	-118.97813
Seep/Spring	GB-12	48.95114	-118.97796
Seep/Spring	GBES-1	48.95099	-118.97795
Seep/Spring	JJ-14	48.94213	-118.97102
Seep/Spring	JJ-15	48.93534	-118.97291
Seep/Spring	JJ-16	48.95097	-118.97755
Seep/Spring	JJ-18	48.94883	-118.96616
Seep/Spring	JJ-20	48.94765	-118.96571
Seep/Spring	JJ-21	48.95111	-118.97949
Seep/Spring	JJ-22	48.93928	-119.00051
Seep/Spring	JJ-25	48.93175	-118.99836
Seep/Spring	SN-04	48.96149	-118.96863
Seep/Spring	SN-12	48.94943	-119.00435
Seep/Spring	SN-22	48.94888	-118.96867

# Buckhorn WA0052434 Seep and Spring Monitoring Locations



## Legend

- 2014 Capture Zone
- Seep & Spring locations

Map by Washington State Department of Ecology, February 1, 2014




Permit Outfalls Coordinates (referenced in NAD 83) Decimal Degrees

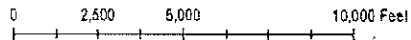
Type	ID	Latitude N	Longitude W
Effluent Outfall	Outfall 002	48.950922	-118.977355
Non industrial stormwater	Outfall 002d	48.945177	-118.974720
Effluent Outfall	Outfall 003	48.942947	-118.972425
Effluent Outfall	Outfall 004	48.904073	-118.868892
Contingency Outfall	Outfall 005	48.904289	-118.869344
Effluent Outfall	Outfall 008	48.948905	-118.988943
USFS Emergency Outfall	Outfall 012	48.949084	-118.978326

Buckhorn WA0052434  
Permitted Outfall Locations



### Legend

-  Outfall Location  
 NPOES Permit Capture Zone



# **Attachment 4**

(Case No. 351998)

## WAC 173-200-050

### Enforcement limit.

(1) An enforcement limit is a value assigned to any contaminant for the purposes of regulating that contaminant to protect existing groundwater quality and to prevent groundwater pollution.

(2) Enforcement limits shall be defined on a case-by-case basis and shall be met at the point of compliance as defined in WAC 173-200-060. When the point of compliance is established at or in close proximity to the property boundary, enforcement limits shall be established sufficiently below criteria to provide an adequate margin of safety to ensure pollution does not extend beyond the property boundary.

(3) All enforcement limits shall, at a minimum, be based on all known, available, and reasonable methods of prevention, control, and treatment.

(a) The department shall consider all of the following in establishing enforcement limits:

- (i) The antidegradation policy;
- (ii) Establishment of an enforcement limit as near the natural groundwater quality as practical;
- (iii) Overall protection of human health and the environment;
- (iv) Whether the potentially affected area has been designated as a special protection area;
- (v) Protection of existing and future beneficial uses;
- (vi) Effects of the presence of multiple chemicals, multiple exposure pathways in accordance with subsection (5) of this section, and toxicity of individual contaminants;
- (vii) Federal, state, tribal, and local land use plans, policies, or ordinances including wellhead protection programs;
- (viii) Pollution of other media such as soils or surface waters; and
- (ix) Any other considerations the department deems pertinent to achieve the objectives of this chapter.

(b) Where a criterion is established for a given contaminant, the enforcement limit shall not exceed the criterion except as follows:

(i) When the natural groundwater quality for a contaminant exceeds the criterion, the enforcement limit for that contaminant shall be equal to the natural level.

(ii) When the background groundwater quality exceeds a criterion, the enforcement limit at the point of compliance shall not exceed the background groundwater quality for that criterion. Enforcement limits based on elevated background groundwater quality shall in no way be construed to allow continued pollution of the receiving groundwater.

(iii) When a criterion is less than the practical quantification level, the enforcement limit shall be established in an alternate location to provide a realistic estimate that the criterion shall not be exceeded in the groundwater. Evaluation for such enforcement limits shall be performed in accordance with WAC 173-200-080(5).

(iv) When naturally nonpotable groundwater exceeds a secondary contaminant criterion, an enforcement limit for a secondary contaminant may exceed a criterion when it can be demonstrated to the department's satisfaction that:

- (A) The environment is protected;
- (B) Human health is protected in consultation with the Washington state department of health;
- (C) Existing and future beneficial uses are not harmed; and
- (D) All known, available, and reasonable methods of prevention, control, and treatment will not result in concentrations less than the secondary contaminant criteria.

(v) Enforcement limits may exceed criteria in isolated artificial or seasonal groundwaters when all of the following conditions exist:

- (A) The isolated artificial or seasonal groundwaters are of insufficient quantity for use as a drinking water source;
- (B) Established enforcement limits will not cause harm to existing and future beneficial uses including support of seasonal wetlands;

(C) Accumulation of contaminants will not cause adverse acute or chronic effects to human health as determined in consultation with the Washington state department of health;

(D) Accumulation of contaminants will not cause adverse acute or chronic effects to the environment.

(vi) In rare circumstances the department may allow an enforcement limit to exceed a criterion for an activity for a period not to exceed five years without reconsideration of the evidence presented in subitems (A), (B), and (C) of this subdivision, and if all of the following conditions are met:

(A) The permit holder or responsible person demonstrates to the department's satisfaction that an enforcement limit that exceeds a criterion is necessary to provide greater benefit to the environment as a whole and to protect other media such as air, surface water, soil, or sediments;

(B) The activity has been demonstrated to be in the overriding public interest of human health and the environment;

(C) The department selects, from a variety of control technologies available for reducing and eliminating contamination from each potentially affected media, the technologies that minimize impacts to all affected media; and

(D) The action has been approved by the director of the department or his/her designee.

(4) Where a criterion is not established for a contaminant, the enforcement limit in groundwater shall not exceed the practical quantification level except:

(a) Where there is evidence that a lower concentration would better protect human health and the environment (based on published health advisories, risk assessments, and other available information), the department shall establish a more stringent enforcement limit;

(b) If clear and convincing evidence can be provided to the department that an alternative concentration will provide protection to human health and the environment, the department may establish an enforcement limit higher than the practical quantification level.

Protection of human health shall be determined in consultation with the Washington state department of health.

(5) For multiple contaminants and multiple routes of exposure, enforcement limits shall be addressed as follows:

(a) Estimated doses of individual contaminants from one or more routes of exposure are assumed to be additive unless evidence is available to suggest otherwise.

(b) Adverse effects of multiple contaminants with similar types of toxic responses are assumed to be additive unless evidence is available to suggest otherwise.

(c) Human cancer risks associated with multiple carcinogens are assumed to be additive unless evidence is available to suggest otherwise and shall not exceed a total incremental human cancer risk of 1 in 1,000,000.

(6) The enforcement limit for a specific activity may be established through, but not limited to the following mechanisms: A state administrative rule, a state waste discharge permit, other department permit, or administrative order.

(7) The groundwater quality at the point of compliance for an activity may temporarily exceed an enforcement limit while the activity is under an enforceable schedule of compliance.

[Statutory Authority: RCW **90.48.035**. WSR 90-22-023, § 173-200-050, filed 10/31/90, effective 12/1/90.]

# **Attachment 5**

(Case No. 351998)

## WAC 173-220-130

### Effluent limitations, water quality standards and other requirements for permits.

(1) Any permit issued by the department shall apply and insure compliance with all of the following, whenever applicable:

(a) All known, available, and reasonable methods of treatment required under RCW **90.52.040**, **90.54.020** (3)(b), and **90.48.520**; including effluent limitations established under sections 301, 302, 306, and 307 of the FWPCA. The effluent limitations shall not be less stringent than those based upon the treatment facility design efficiency contained in approved engineering plans and reports or approved revisions thereto. The effluent limitations shall reflect any seasonal variation in industrial loading.

Modifications to technology-based effluent limitations for specific discharge categories are as follows:

(i) For combined waste treatment facilities, the effluent limitations for biochemical oxygen demand or suspended solids may be adjusted upwards to a maximum allowed by applying effluent limitations pursuant to sections 301 (b)(1)(B) of the FWPCA to the domestic portion of the influent and effluent limitations pursuant to sections 301 (b)(1)(A)(i), 301 (b)(2)(A), and 301 (b)(2)(E) of the FWPCA or standards of performance pursuant to section 306 of the FWPCA to the industrial portion of the influent:

Provided, That the following additional condition is met:

Fecal coliform levels shall not exceed a monthly geometric mean of 200 organisms per 100 ml with a maximum weekly geometric mean of 400 organisms per 100 ml;

(ii) For municipal water treatment plants located on the Chehalis, Columbia, Cowlitz, Lewis, or Skagit river, the effluent limitations shall be adjusted, in accordance with RCW **90.54.020** (3)(b), to reflect credit for substances removed from the plant intake water if:

(A) The municipality demonstrates that the intake water is drawn from the same body of water into which the discharge is made; and

(B) The municipality demonstrates that no violation of receiving water quality standards or appreciable environmental degradation will result.

(b) Any more stringent limitation, including those necessary to:

(i) Meet water quality standards, treatment standards or schedules of compliance established pursuant to any state law or regulation under authority preserved to the state by section 510 of the FWPCA; or

(ii) Meet any federal law or regulation other than the FWPCA or regulations thereunder; or

(iii) Implement any applicable water quality standards; such limitations to include any legally applicable requirements necessary to implement total maximum daily loads established pursuant to section 303(d) and incorporated in the continuing planning process approved under section 303(e) of the FWPCA and any regulations and guidelines issued pursuant thereto;

(iv) Prevent or control pollutant discharges from plant site runoff, spillage or leaks, sludge or waste disposal, or materials handling or storage; and

(v) Meet the permit by rule provisions of the state dangerous waste regulation, WAC **173-303-802** (4) or (5).

(c) Any more stringent legal applicable requirements necessary to comply with a plan approved pursuant to section 208(b) of the FWPCA; and

(d) Prior to promulgation by the administrator of applicable effluent standards and limitations pursuant to sections 301, 302, 306, and 307 of the FWPCA, such conditions as the department determines are necessary to carry out the provisions of the FWPCA.

(2) In any case where an issued permit applies the effluent standards and limitations described in subsection (1)(a) of this section, the department shall make a finding that any discharge authorized by the permit will not violate applicable water quality standards.

(3) In the application of effluent standards and limitations, water quality standards and other legally applicable requirements pursuant to subsections (1) and (2) of this section, each issued permit shall

specify:

(a) For industrial wastewater facilities, average monthly and maximum daily quantitative mass and/or concentration limitations, or other such appropriate limitations for the level of pollutants and the authorized discharge;

(b) For domestic wastewater facilities, average weekly and monthly quantitative concentration and mass limitations, or other such appropriate limitations for the level of pollutants and the authorized discharge; and

(c) If a dilution zone is authorized within which water quality standards are modified, the dimensions of such dilution zone.

[Statutory Authority: RCW **90.54.020** and chapter **90.48** RCW. WSR 88-22-059 (Order 88-9), § 173-220-130, filed 11/1/88. Statutory Authority: RCW **90.48.035** and **90.48.260**. WSR 82-24-078 (Order DE 82-39), § 173-220-130, filed 12/1/82; Order DE 74-1, § 173-220-130, filed 2/15/74.]



# **Attachment 6**

(Case No. 351998)

## WAC 173-201A-020

### Definitions.

The following definitions are intended to facilitate the use of chapter **173-201A** WAC:

**"1-DMax"** or **"1-day maximum temperature"** is the highest water temperature reached on any given day. This measure can be obtained using calibrated maximum/minimum thermometers or continuous monitoring probes having sampling intervals of thirty minutes or less.

**"7-DADMax"** or **"7-day average of the daily maximum temperatures"** is the arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-DADMax for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date.

**"Action value"** means a total phosphorus (TP) value established at the upper limit of the trophic states in each ecoregion (see Table 230(1)). Exceedance of an action value indicates that a problem is suspected. A lake-specific study may be needed to confirm if a nutrient problem exists.

**"Actions"** refers broadly to any human projects or activities.

**"Acute conditions"** are changes in the physical, chemical, or biologic environment which are expected or demonstrated to result in injury or death to an organism as a result of short-term exposure to the substance or detrimental environmental condition.

**"AKART"** is an acronym for "all known, available, and reasonable methods of prevention, control, and treatment." AKART shall represent the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge. The concept of AKART applies to both point and nonpoint sources of pollution. The term "best management practices," typically applied to nonpoint source pollution controls is considered a subset of the AKART requirement.

**"Background"** means the biological, chemical, and physical conditions of a water body, outside the area of influence of the discharge under consideration. Background sampling locations in an enforcement action would be up-gradient or outside the area of influence of the discharge. If several discharges to any water body exist, and enforcement action is being taken for possible violations to the standards, background sampling would be undertaken immediately up-gradient from each discharge.

**"Best management practices (BMP)"** means physical, structural, and/or managerial practices approved by the department that, when used singularly or in combination, prevent or reduce pollutant discharges.

**"Biological assessment"** is an evaluation of the biological condition of a water body using surveys of aquatic community structure and function and other direct measurements of resident biota in surface waters.

**"Bog"** means those wetlands that are acidic, peat forming, and whose primary water source is precipitation, with little, if any, outflow.

**"Carcinogen"** means any substance or agent that produces or tends to produce cancer in humans. For implementation of this chapter, the term carcinogen will apply to substances on the United States Environmental Protection Agency lists of A (known human) and B (probable human) carcinogens, and any substance which causes a significant increased incidence of benign or malignant tumors in a single, well conducted animal bioassay, consistent with the weight of evidence approach specified in the United States Environmental Protection Agency's Guidelines for Carcinogenic Risk Assessment as set forth in 51 FR 33992 et seq. as presently published or as subsequently amended or republished.

**"Chronic conditions"** are changes in the physical, chemical, or biologic environment which are expected or demonstrated to result in injury or death to an organism as a result of repeated or constant exposure over an extended period of time to a substance or detrimental environmental condition.

**"Combined sewer overflow (CSO) treatment plant"** is a facility that provides at-site treatment as provided for in chapter **173-245** WAC. A CSO treatment plant is a specific facility identified in a department-approved CSO reduction plan (long-term control plan) that is designed, operated and

controlled by a municipal utility to capture and treat excess combined sanitary sewage and stormwater from a combined sewer system.

**"Compliance schedule" or "schedule of compliance"** is a schedule of remedial measures included in a permit or an order, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with an effluent limit, other prohibition, or standard.

**"Created wetlands"** means those wetlands intentionally created from nonwetland sites to produce or replace natural wetland habitat.

**"Critical condition"** is when the physical, chemical, and biological characteristics of the receiving water environment interact with the effluent to produce the greatest potential adverse impact on aquatic biota and existing or designated water uses. For steady-state discharges to riverine systems the critical condition may be assumed to be equal to the 7Q10 flow event unless determined otherwise by the department.

**"Damage to the ecosystem"** means any demonstrated or predicted stress to aquatic or terrestrial organisms or communities of organisms which the department reasonably concludes may interfere in the health or survival success or natural structure of such populations. This stress may be due to, but is not limited to, alteration in habitat or changes in water temperature, chemistry, or turbidity, and shall consider the potential build up of discharge constituents or temporal increases in habitat alteration which may create such stress in the long term.

**"Department"** means the state of Washington department of ecology.

**"Designated uses"** are those uses specified in this chapter for each water body or segment, regardless of whether or not the uses are currently attained.

**"Director"** means the director of the state of Washington department of ecology.

**"Drainage ditch"** means that portion of a designed and constructed conveyance system that serves the purpose of transporting surplus water; this may include natural water courses or channels incorporated in the system design, but does not include the area adjacent to the water course or channel.

**"Ecoregions"** are defined using EPA's *Ecoregions of the Pacific Northwest* Document No. 600/3-86/033 July 1986 by Omernik and Gallant.

**"Enterococci"** refers to a subgroup of fecal streptococci that includes *S. faecalis*, *S. faecium*, *S. gallinarum*, and *S. avium*. The enterococci are differentiated from other streptococci by their ability to grow in 6.5% sodium chloride, at pH 9.6, and at 10°C and 45°C.

**"E. coli" or "Escherichia coli"** is an aerobic and facultative gram negative nonspore forming rod shaped bacterium that can grow at 44.5 degrees Celsius that is ortho-nitrophenyl-B-D-galactopyranoside (ONPG) positive and Methylumbelliferyl glucuronide (MUG) positive.

**"Existing uses"** means those uses actually attained in fresh or marine waters on or after November 28, 1975, whether or not they are designated uses. Introduced species that are not native to Washington, and put-and-take fisheries comprised of nonself-replicating introduced native species, do not need to receive full support as an existing use.

**"Extraordinary primary contact"** means waters providing extraordinary protection against waterborne disease or that serve as tributaries to extraordinary quality shellfish harvesting areas.

**"Fecal coliform"** means that portion of the coliform group which is present in the intestinal tracts and feces of warm-blooded animals as detected by the product of acid or gas from lactose in a suitable culture medium within twenty-four hours at 44.5 plus or minus 0.2 degrees Celsius.

**"Geometric mean"** means either the nth root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.

**"Ground water exchange"** means the discharge and recharge of ground water to a surface water. Discharge is inflow from an aquifer, seeps or springs that increases the available supply of surface water. Recharge is outflow downgradient to an aquifer or downstream to surface water for base flow maintenance. Exchange may include ground water discharge in one season followed by recharge later in the year.

**"Hardness"** means a measure of the calcium and magnesium salts present in water. For purposes of this chapter, hardness is measured in milligrams per liter and expressed as calcium carbonate (CaCO<sub>3</sub>).

**"Intake credit"** is a procedure for establishing effluent limits that takes into account the amount of a pollutant that is present in waters of the state, at the time water is removed from the same body of water by the discharger or other facility supplying the discharger with intake water.

**"Irrigation ditch"** means that portion of a designed and constructed conveyance system that serves the purpose of transporting irrigation water from its supply source to its place of use; this may include natural water courses or channels incorporated in the system design, but does not include the area adjacent to the water course or channel.

**"Lakes"** shall be distinguished from riverine systems as being water bodies, including reservoirs, with a mean detention time of greater than fifteen days.

**"Lake-specific study"** means a study intended to quantify existing nutrient concentrations, determine existing characteristic uses for lake class waters, and potential lake uses. The study determines how to protect these uses and if any uses are lost or impaired because of nutrients, algae, or aquatic plants. An appropriate study must recommend a criterion for total phosphorus (TP), total nitrogen (TN) in µg/l, or other nutrient that impairs characteristic uses by causing excessive algae blooms or aquatic plant growth.

**"Mean detention time"** means the time obtained by dividing a reservoir's mean annual minimum total storage by the thirty-day ten-year low-flow from the reservoir.

**"Migration or translocation"** means any natural movement of an organism or community of organisms from one locality to another locality.

**"Mixing zone"** means that portion of a water body adjacent to an effluent outfall where mixing results in the dilution of the effluent with the receiving water. Water quality criteria may be exceeded in a mixing zone as conditioned and provided for in WAC [173-201A-400](#).

**"Natural conditions"** or **"natural background levels"** means surface water quality that was present before any human-caused pollution. When estimating natural conditions in the headwaters of a disturbed watershed it may be necessary to use the less disturbed conditions of a neighboring or similar watershed as a reference condition. (See also WAC [173-201A-260](#)(1).)

**"New or expanded actions"** mean human actions that occur or are regulated for the first time, or human actions expanded such that they result in an increase in pollution, after July 1, 2003, for the purpose of applying this chapter only.

**"Nonpoint source"** means pollution that enters any waters of the state from any dispersed land-based or water-based activities including, but not limited to, atmospheric deposition; surface water runoff from agricultural lands, urban areas, or forest lands; subsurface or underground sources; or discharges from boats or marine vessels not otherwise regulated under the National Pollutant Discharge Elimination System program.

**"Permit"** means a document issued pursuant to chapter [90.48](#) RCW specifying the waste treatment and control requirements and waste discharge conditions.

**"pH"** means the negative logarithm of the hydrogen ion concentration.

**"Pollution"** means such contamination, or other alteration of the physical, chemical, or biological properties, of any waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental, or injurious to the public health, safety, or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish, or other aquatic life.

**"Primary contact recreation"** means activities where a person would have direct contact with water to the point of complete submergence including, but not limited to, skin diving, swimming, and water skiing.

**"Secondary contact recreation"** means activities where a person's water contact would be limited (e.g., wading or fishing) to the extent that bacterial infections of eyes, ears, respiratory or digestive systems, or urogenital areas would normally be avoided.

**"Shoreline stabilization"** means the anchoring of soil at the water's edge, or in shallow water, by fibrous plant root complexes; this may include long-term accretion of sediment or peat, along with shoreline progradation in such areas.

**"Stormwater"** means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body, or a constructed infiltration facility.

**"Stormwater attenuation"** means the process by which peak flows from precipitation are reduced and runoff velocities are slowed as a result of passing through a surface water body.

**"Surface waters of the state"** includes lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands and all other surface waters and water courses within the jurisdiction of the state of Washington.

**"Temperature"** means water temperature expressed in degrees Celsius (°C).

**"Treatment wetlands"** means those wetlands intentionally constructed on nonwetland sites and managed for the primary purpose of wastewater or stormwater treatment. Treatment wetlands are considered part of a collection and treatment system, and generally are not subject to the criteria of this chapter.

**"Trophic state"** means a classification of the productivity of a lake ecosystem. Lake productivity depends on the amount of biologically available nutrients in water and sediments and may be based on total phosphorus (TP). Secchi depth and chlorophyll-a measurements may be used to improve the trophic state classification of a lake. Trophic states used in this rule include, from least to most nutrient rich, ultra-oligotrophic, oligotrophic, lower mesotrophic, upper mesotrophic, and eutrophic.

**"Turbidity"** means the clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.

**"Upwelling"** means the natural process along Washington's Pacific Coast where the summer prevailing northerly winds produce a seaward transport of surface water. Cold, deeper more saline waters rich in nutrients and low in dissolved oxygen, rise to replace the surface water. The cold oxygen deficient water enters Puget Sound and other coastal estuaries at depth where it displaces the existing deep water and eventually rises to replace the surface water. Such surface water replacement results in an overall increase in salinity and nutrients accompanied by a depression in dissolved oxygen. Localized upwelling of the deeper water of Puget Sound can occur year-round under influence of tidal currents, winds, and geomorphic features.

**"USEPA"** means the United States Environmental Protection Agency.

**"Variance"** is a time-limited designated use and criterion as defined in 40 C.F.R. 131.3, and must be adopted by rule.

**"Wetlands"** means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands. (Water bodies not included in the definition of wetlands as well as those mentioned in the definition are still waters of the state.)

**"Wildlife habitat"** means waters of the state used by, or that directly or indirectly provide food support to, fish, other aquatic life, and wildlife for any life history stage or activity.

[Statutory Authority: RCW **90.48.035**, **90.48.605** and section 303(c) of the Federal Water Pollution Control Act (Clean Water Act), C.F.R. 40, C.F.R. 131. WSR 16-16-095 (Order 12-03), § 173-201A-020, filed 8/1/16, effective 9/1/16. Statutory Authority: RCW **90.48.035**. WSR 11-09-090 (Order 10-10), § 173-201A-020, filed 4/20/11, effective 5/21/11. Statutory Authority: Chapters **90.48** and **90.54** RCW. WSR 03-14-129 (Order 02-14), § 173-201A-020, filed 7/1/03, effective 8/1/03. Statutory Authority: Chapter **90.48** RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-020, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter **90.48** RCW. WSR 92-24-037 (Order 92-29), § 173-201A-020, filed 11/25/92, effective 12/26/92.]

# **Attachment 7**

(Case No. 351998)




## **Implementation Guidance**

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### **for the Ground Water Quality Standards**

Revised October 2005  
Publication # 96-02

  
*printed on recycled paper*



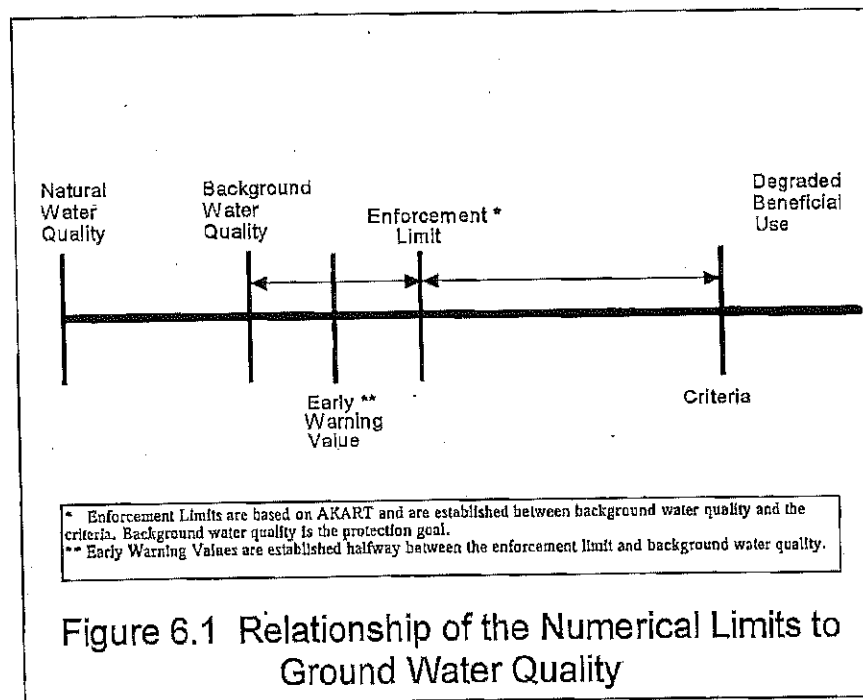
## 6.0 Numerical Limits

### 6.1 Introduction

Criteria, enforcement limits and early warning values are regulatory thresholds, which are designed to protect ground water from contaminants discharged from permitted activities. Activities which do not require an individual permit generally rely on best management practices or other requirements to achieve compliance rather than utilizing numerical limits.

The numeric criteria values and the narrative standards represent contaminant concentrations which are not to be exceeded in ground water. An enforcement limit is the value assigned to a contaminant for the purposes of

regulation. This limit protects existing ground water quality and assures that a criteria will not be exceeded. Enforcement limits are generally established at levels less than the criteria, (figure 6.1). An early warning value acts as a trigger to detect increasing contaminant concentrations prior to the degradation of a beneficial use. It is a mechanism which alerts the owner and Ecology that the facility may not be operating under optimal conditions. This allows the problem to be corrected before an enforcement limit or criterion is exceeded. Enforcement limits and early warning values are based on a site specific evaluation with the goal of meeting the antidegradation policy guidelines.



## 6.2 Criteria

Criteria are the pollutant concentrations which theoretically should never be exceeded in ground water. *Criteria do not represent the goal for ground water quality. Criteria alone do not necessarily achieve the intent of the antidegradation policy. The goal of the Antidegradation Policy is to protect background water quality to the extent practical. Enforcement limits described in section 6.3 are the limits with which compliance is measured.* When a criterion is exceeded, the water is no longer considered suitable for one or more beneficial uses. Criteria are designed to protect a variety of beneficial uses. The numeric criteria are based on drinking water standards which protect human health. Generally, drinking water standards require a high quality of water. Therefore, protection to the drinking water criteria will generally protect a variety of other beneficial uses.

There are two types of criteria: numeric and narrative. Numeric criteria are listed in WAC 173-200-040 table 1 (appendix A, table 9.1, bold print), and are established at levels for specific contaminants based on the best available scientific knowledge. The numeric criteria are defined as the federal primary and secondary maximum contaminant levels (MCL's), maximum contaminant level goals (MCLG's), or the human health based carcinogens (using the one in one million cancer risk equation found in appendix D), whichever is most protective. For example, the MCL for arsenic is established at 0.05 mg/l; however, arsenic is also classified as a carcinogen, therefore the criteria is established at 0.00005 mg/l or 0.05 ug/l. As the EPA or the State of Washington develops new or revised MCL's or MCLG's, the criteria will be revised without amendment of the rule [WAC 173-200-040 (2)(b)(iii)]. The

criteria for carcinogens are based on a one in a one million ( $1 \times 10^{-6}$ ) increased incidence of cancer risk. As new carcinogens are identified, the criteria for these chemicals will be determined using the equation and the standard exposure assumptions described in Appendix D. Methods for calculating criteria for multiple carcinogens based on synergistic effects are also described in Appendix D.

Narrative standards are descriptive statements of environmental and health based goals. The narrative standards regulate contaminants which are not specifically identified in WAC 173-200-040 table 1, but may be detrimental to human health or the environment. WAC 173-200-040(3) allows the establishment of enforcement limits for those contaminants with no numeric criteria. These include the priority pollutants and many other contaminants which are harmful but are not classified as MCL's, MCLG's, or carcinogens. Even though the narrative standards do not mention specific chemicals or harmful concentrations, the ground water is still protected from chemical concentrations which would degrade existing high quality ground water or degrade an existing or future beneficial use. If a contaminant is harmful to a beneficial use, then it is regulated under the Ground Water Quality Standards regardless of whether it is listed in WAC 173-200-040 table 1. If a beneficial use requires a more stringent standard than a criterion specified in Chapter 173-200 WAC, then the more stringent standard applies to the discharge. There are some contaminants, such as xylene, which do not have an established MCL, and they are not classified as a carcinogen, but are toxic and would be harmful to a particular beneficial use. If a contaminant not specifically listed in Chapter 173-200 WAC is present which would degrade a beneficial use, then a limit for that constituent can be established on a site specific basis. Essentially, the narrative standards are designed to protect all beneficial uses.

## 6.3 Enforcement Limits

Enforcement limits are regulatory thresholds which are established for individual contaminants to delineate when ground water has been contaminated. An enforcement limit is the concentration that represents the maximum allowable concentration of a particular substance which can be detected at a specific point of compliance. Points of compliance are described in section 5.6. Enforcement limits are determined on a site-specific basis and are generally established at levels less than the criteria. Enforcement limits are commonly used within a formal regulatory framework, such as a permit, to ensure that the criteria will not be exceeded and that background water quality will be protected. Figure 6.2 provides an overview describing how enforcement limits are established. Figure 6.4 gives a more detailed explanation of all the specific elements which must be considered when enforcement limits are established.

Enforcement limits and early warning values are generally established for activities which require an individual permit. Limits are established in individual state waste discharge permits for the duration of one permit cycle (generally 5 years or less). Limits also can be incorporated into permits through a permit modification. Enforcement limits for point source discharges in an individual permit can be established in ground water. Additionally monitoring limits can be established in surface water, the vadose zone, effluent, or within the treatment process to assess other impacts to the environment or to project compliance with an enforcement limit in ground water. Any one or a combination of these can be used to assess the effects of an activity on the environment, depending upon the monitoring requirements outlined in chapter 5.0.

Compliance with an enforcement limit must be met for all constituents of concern at the point of compliance or the alternative point of compliance. The point of compliance is discussed in further detail in chapter 5.0. Chapter 7.0, describes the action which is taken when an early warning value, an enforcement limit or a criterion are exceeded.

### 6.3.1 Overview

The goal of the Ground Water Quality Standards is to minimize the impact to background water quality by promoting the most effective and reasonable treatment and reduction of wastewater discharges. The purpose of this guidance is to establish enforcement limits for the protection of ground water in conformance with the Ground Water Quality Standards. Enforcement limits will be established on a case-by-case basis considering the application of AKART and the conditions specified in WAC 173-200-050(3)(a).

An overview of the process to establish enforcement limits is described in figure 6.2. At a minimum, all facilities must apply AKART to their wastestream. The permittee must complete an AKART evaluation which involves listing all available treatment technology alternatives, including the effective treatment levels and the costs associated with each technology. The goal in listing these alternatives is to determine if there is a reasonable treatment technology available which is protective of background water quality. A non-discharging option should also be considered. AKART has been determined to be a process of deriving the technology based treatment level. AKART has specific and separate cost tests for determining reasonable costs for conventional and toxic pollutants, (Ecology, 94). If a determination

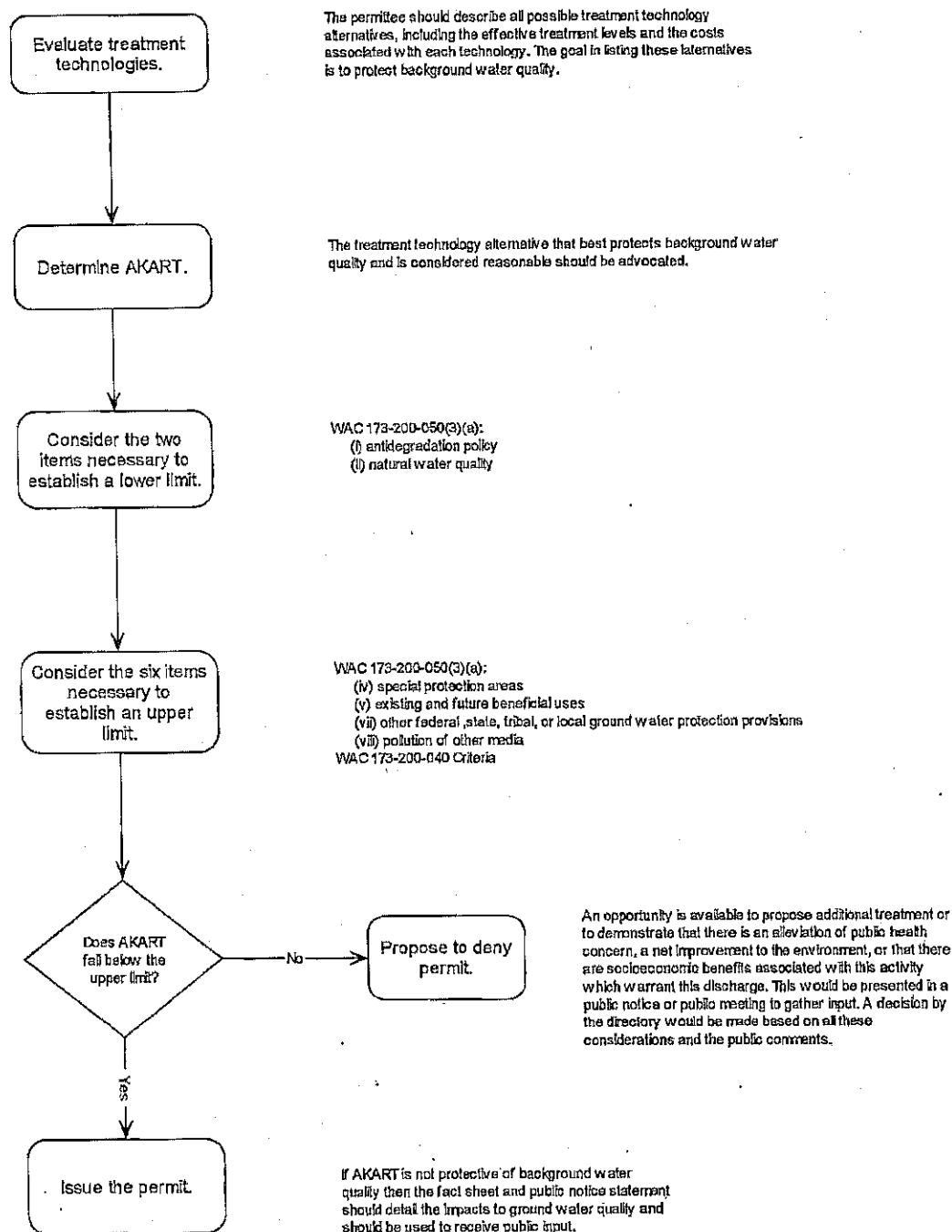


Figure 6.2 Overview of the Process to Establish Enforcement Limits



of AKART is not protective of the background water quality, in some cases additional treatment for meeting the Ground Water Quality Standards may be necessary if it is cost effective and justifiable. If background water quality cannot be maintained, then a demonstration should be made which explains why ground water should be allowed to be degraded. This demonstration is part of the overriding public interest process.

Ecology must also consider the following items, detailed in WAC 173-200-050(3)(a), in determining enforcement limits. Some of these factors define an upper level for the enforcement level while some of these factors define a lower level. An AKART evaluation will determine where within the range of the upper and lower levels that it is reasonable to protect ground water quality. Each of the treatment technologies proposed should be evaluated to determine which one will adequately and cost effectively protect background water quality. Enforcement limits should be established at levels less than the criteria; however, there are six circumstances when an enforcement limit can exceed a criterion. These are specified in WAC 173-200-050(3)(b). If no adequate or cost effective treatment technology is available which protects background water quality, then WAC 173-200-050(3)(a)(ix) should be evaluated to determine if the discharge is necessary.

Two factors can affect the *lower level* of the enforcement limit. These are defined under WAC 173-200-050(3)(a) and include:

- (i) The anti degradation policy
- (ii) The protection of natural water quality.

Six factors can affect the *upper level* of the enforcement limit. These include:

WAC 173-200-040 criteria

WAC 173-200-050(3)(a):

- (iv) special protection areas
- (v) existing and future beneficial uses
- (vi) multiple contaminants/exposure routes
- (vii) Other federal, state, tribal, or local ground water protection provisions
- (viii) Pollution of other media

There are six circumstances identified in Chapter 173-200 WAC which allow an *enforcement limit to be established at a level greater than the criterion*. These are described under WAC 173-200-050(3)(b) and are allowed when:

- (i) Natural water quality exceeds a criterion
- (ii) Background water quality exceeds a criterion
- (iii) The criterion is less than the practical quantification limit (PQL)
- (iv) Naturally nonpotable ground water exceeds a secondary contaminant criterion
- (v) The ground water is defined as isolated artificial or isolated seasonal ground water
- (vi) There is a net environmental benefit

If AKART does not provide treatment of the wastewater to levels less than the upper level, and none of the specified six circumstances which allow an enforcement limit to be established above the criterion exist, then an opportunity is available to demonstrate that other conditions are present which warrant the discharge to occur.

These considerations are defined under WAC 173-200-050(3)(a)(ix) and include the following:

1. An alleviation of a public health concern,
2. A net improvement to the environment, or
3. Socioeconomic benefits.

These considerations must be presented in a public notice or a public forum to gather input. A presentation must be made to the director outlining these considerations and the comments received through the public forum. A decision whether the permit should be issued will be made by the director or their designee based on this information.

### 6.3.2 Establishing Enforcement Limits

Establishing enforcement limits is a dual process. The treatment technology evaluation and the water quality evaluation must both be considered. The treatment technology which is reasonable and is most protective of background water quality should be advocated. Figure 6.4 details the steps and elements to consider when establishing an enforcement limit.

Enforcement limits should be calculated using the following procedures:

#### 6.3.2.1 Treatment Technology Evaluation

*WAC 173-200-050 (3) all enforcement limits shall, at a minimum, be based on all known, available, and reasonable methods of prevention, control and treatment.*

AKART is the acronym for "all known, available, and reasonable methods of prevention, control and treatment". AKART should reduce the contaminant load sufficiently to assure that the criteria will not be exceeded, and must be applied to all wastes prior to entry into ground water. The permittee must complete an AKART evaluation which involves listing all available treatment technology alternatives including defining the effective treatment levels and the costs associated with each technology. A non-discharging option should also be considered. An appropriate treatment technology will be chosen based on its ability to minimize the impact to the environment. The goal in listing these alternatives is to protect background water quality. The treatment technology alternative which is reasonable and best protects background water quality should be advocated. If background water quality cannot be maintained, then a demonstration should be made which explains why ground water should be allowed to be degraded.

#### 6.3.2.2 Water Quality Evaluation

*The department shall consider all of the following in establishing enforcement limits, [WAC 173-200-050 (3)(a)].*

##### 6.3.2.2.1 The Antidegradation Policy

*WAC 173-200-050(3)(a)(i) the antidegradation policy*

*WAC 173-200-030(2)(a) Existing and future beneficial uses shall be maintained and protected and degradation of ground water quality that would interfere with or become injurious to beneficial uses shall not be allowed.*

*(b) Degradation shall not be allowed of high quality ground waters constituting an*

*outstanding national or state resource, such as waters of national and state parks and wildlife refuges, and waters of exceptional recreational or ecological significance.*

*(c) Whenever ground waters are of a higher quality than the criteria assigned for said waters, the existing water quality shall be protected, and contaminants that will reduce the existing quality thereof shall not be allowed to enter such waters, except in those instances where it can be demonstrated to the department's satisfaction that: (i) an overriding consideration of the public interest will be served, and (ii) all contaminants proposed for entry into said ground waters shall be provided with AKART prior to entry.*

The first section of the antidegradation policy considers the preservation of existing and future beneficial uses. All ground water is protected at a minimum as a potential source of drinking water, which is reflected in the criteria. However if there is a beneficial use which requires more stringent protection, then this establishes an upper level for an enforcement limit. Contaminants which do not have a criterion, but may impair a beneficial use must also be considered. For example, boron is not a contaminant which is harmful to human health, but there are some crops which are sensitive to elevated concentrations. If a facility discharges boron in an area where ground water is being used for irrigated agriculture, then an enforcement limit must be established at a level which protects that crop. This consideration is similar to WAC 173-200-050(3)(a)(v).

The second section considers outstanding resource waters which warrant a nondegradation policy. If an outstanding resource water is within the area of impact or is hydraulically connected to the receiving water, then the enforcement limit should be established at the

background water quality. Outstanding resource waters include: national parks, state parks, wildlife refuges, and waters of exceptional recreational or ecological significance.

The third section is concerned with the protection of existing high quality ground water where the quality is a level less than the criteria. For these ground waters the goal is to protect background water quality concentrations unless the following two demonstrations can be made: (1) AKART is applied to the wastewater, and (2) the overriding public interest will be served.

An AKART evaluation is required of all facilities which discharge wastewater.

Overriding public interest is a demonstration which explains why ground water will not be protected at background water quality concentrations and what benefits the public will receive by allowing this discharge. This rationale must be presented in a public notice or public forum to the affected public. Overriding public interest is discussed further in section 3.2.

#### **6.3.2.2.2 Natural Water Quality**

*WAC 173-200-050(3)(a)(ii) establishment of an enforcement limit as near the natural ground water quality as practical*

Natural ground water quality is defined as that quality which was present prior to human activity. Unless historic data is available which documents natural water quality, it would be difficult to infer the actual quality prior to human activity. Regional water quality may also be used since it is indicative of water unimpacted by area activities. Natural water quality for synthetic organic compounds can be assumed to have a concentration of zero since these chemicals



are manmade. Therefore, it can be deduced that no concentrations of these chemicals should be found in ground water.

When natural water quality is known to be less than background water quality, other practical treatment technologies should be considered to improve the quality of the effluent. It is unreasonable in this situation, to establish enforcement limits in ground water at natural water quality if background concentrations are greater than natural concentrations. Therefore, monitoring limits should be established in the effluent or other media.

#### **6.3.2.2.3 Protection of Human Health and the Environment**

*WAC 173-200-050(3)(a)(iii) overall protection of human health and the environment*

Overall protection of human health is generally provided by the criteria, while overall protection of the environment is generally provided to other media via [WAC 173-200-050(3)(a)(viii)].

This item also includes two additional elements which should be considered:

1. The presence of toxic chemicals which are persistent or mobile in the environment.
2. That the receiving water is not being used as a drinking water source, and the quantity of water is such that it cannot feasibly support a long-term substantial use.

#### **6.3.2.2.4 Special Protection Areas**

*WAC 173-200-050(3)(a)(iv) whether the potentially affected area has been designated as a special protection area*

If an area has been designated as a special protection area, depending upon the specifics of the designation, it could establish an upper level for the enforcement limit.

#### **6.3.2.2.5 Protection of Existing and Future Beneficial Uses**

*WAC 173-200-050(3)(a)(v) protection of existing and future beneficial uses*

Protection of existing and future beneficial uses is also covered by the antidegradation policy, [WAC 173-200-050(3)(a)(i)]. All ground water is protected at a minimum as a potential source of drinking water, which is reflected in the criteria. However if there is a beneficial use which requires more stringent protection, then this establishes an upper level for an enforcement limit. Contaminants which do not have a criterion, but may impair a beneficial use must also be considered. For example, boron is not a contaminant which is harmful to human health, but there are some crops which are sensitive to elevated concentrations. If a facility is discharging boron in an area where ground water is being used for irrigated agriculture, then an enforcement limit must be established at a level which protects that crop.

#### **6.3.2.2.6 Effects of the Presence of Multiple Chemicals, and Multiple Exposure Pathways**

*WAC 173-200-050(3)(a)(vi) effects of the presence of multiple chemicals, multiple exposure pathways in accordance with subsection (5) of this section, and toxicity of individual contaminants*

*WAC 173-200-050(5) for multiple contaminants and multiple routes of exposure, enforcement limits shall be addressed as follows:*

(a) *estimated doses of individual contaminants from one or more routes of exposure are assumed to be additive unless evidence is available to suggest otherwise*

(b) *adverse effects of multiple contaminants with similar types of toxic responses are assumed to be additive unless evidence is available to suggest otherwise*

(c) *human cancer risks associated with multiple carcinogens are assumed to be additive unless evidence is available to suggest otherwise and shall not exceed a total incremental human cancer risk of 1 in 1,000,000*

The presence of multiple contaminants can be considered additive unless demonstrated otherwise. The equations in Appendix D can be used to calculate the human cancer risks based on a single compound, multiple compounds and multiple exposure routes. If the calculations for the multiple compounds or multiple exposure routes result in a number which requires more stringent protection, then that number establishes an upper level for an enforcement limit.

#### **6.3.2.2.7 Other Land Use Plans, Policies, or Ordinances**

*WAC 173-200-050(3)(a)(vii) federal, state, tribal, and local land use plans, policies, or ordinances including wellhead protection programs*

Establishing enforcement limits must also consider other ground water protection regulatory mechanisms which may establish thresholds which should not be exceeded in ground water. Other federal, state, tribal or local regulatory controls for ground water include but are not limited to the following:

land use plans, policies, ordinances, or wellhead protection areas designations.

This information could be compiled during the SEPA process, or the applicant could be required to collect this information in preparation for writing the permit. Ecology will develop a list of the ground water protection mechanisms in the state and consolidate this information with other similar types of designations, such as sole source aquifers, ground water management areas, critical aquifer recharge areas, and special protection areas.

If one of these regulatory controls requires more stringent ground water protection, then this should be used to establish an upper level for an enforcement limit.

#### **6.3.2.2.8 Pollution of Other Media such as Soils or Surface Waters**

*WAC 173-200-050(3)(a)(viii) pollution of other media such as soils or surface waters;*

Protection of other media must also be considered. If another media could be impacted and requires more stringent protection than the ground water criteria, then this establishes an upper level for an enforcement limit. Other media which should be considered include soils, wetlands, and surface water.

These areas can be identified by delineating all of the other media which are hydraulically connected to ground water. Identifying other permits which are required of the facility can also assist in determining other affected media. If there is a hydraulic connection and more stringent protection is required, then a an upper level for an enforcement limit should be established which is reflective of that media.

#### 6.3.2.2.9 Other Considerations Ecology Deems Necessary

*WAC 173-200-050(3)(a)(ix) any other considerations the department deems pertinent to achieve the objectives of this chapter.*

If AKART does not provide treatment of the wastewater below the upper level, and none of the specified six circumstances in WAC 173-200-050(3)(b) (section 6.3.7) exist which allow an enforcement limit to be established above the criterion, then an opportunity is available to demonstrate the benefits and the importance of their facility which would warrant the discharge to occur.

There are three additional considerations that the Department of Ecology has deemed to be pertinent which help to *define whether a discharge would be allowed if AKART is not protective of the upper level*. These include a demonstration of one of the following:

1. An alleviation of a public health concern
2. A net improvement to the environment
3. A socioeconomic benefit.

This must be presented in a public notice or a public forum to gather input. A presentation must be made to the director outlining these considerations and the comments received through the public forum. This process can be used to determine if an enforcement limit can be established above the upper level. Based on this information, the director will determine if the evidence warrants the discharge to occur

### 6.3.3 Background Water Quality

*Background water quality is statistically defined as the 95 percent upper tolerance interval with a 95% confidence.* Background data should be collected according to specifications as outlined in chapter 5.0 of this document. This number should be written in Box B on page 72 of figure 6.4.

The following flow chart (figure 6.3), describes the process for statistically determining background water quality and the process for deriving limits. The flow chart also references various appendices where additional information on statistical methods and examples are further described. This statistical process is only necessary to calculate background water quality when a new permit is being issued, or when a permit is being reissued to accommodate background water quality changes over time.

#### 6.3.3.1 Establishing Enforcement Limits When Background Water Quality Is Greater Than the Criterion

If the background water quality is greater than the criterion then:

*Enforcement Limit = Background Water Quality*

Elevated background water quality does not preclude a discharge from occurring to that aquifer. AKART must still be applied to the wastewater. This is also discussed in this chapter under section 6.3.7.2.

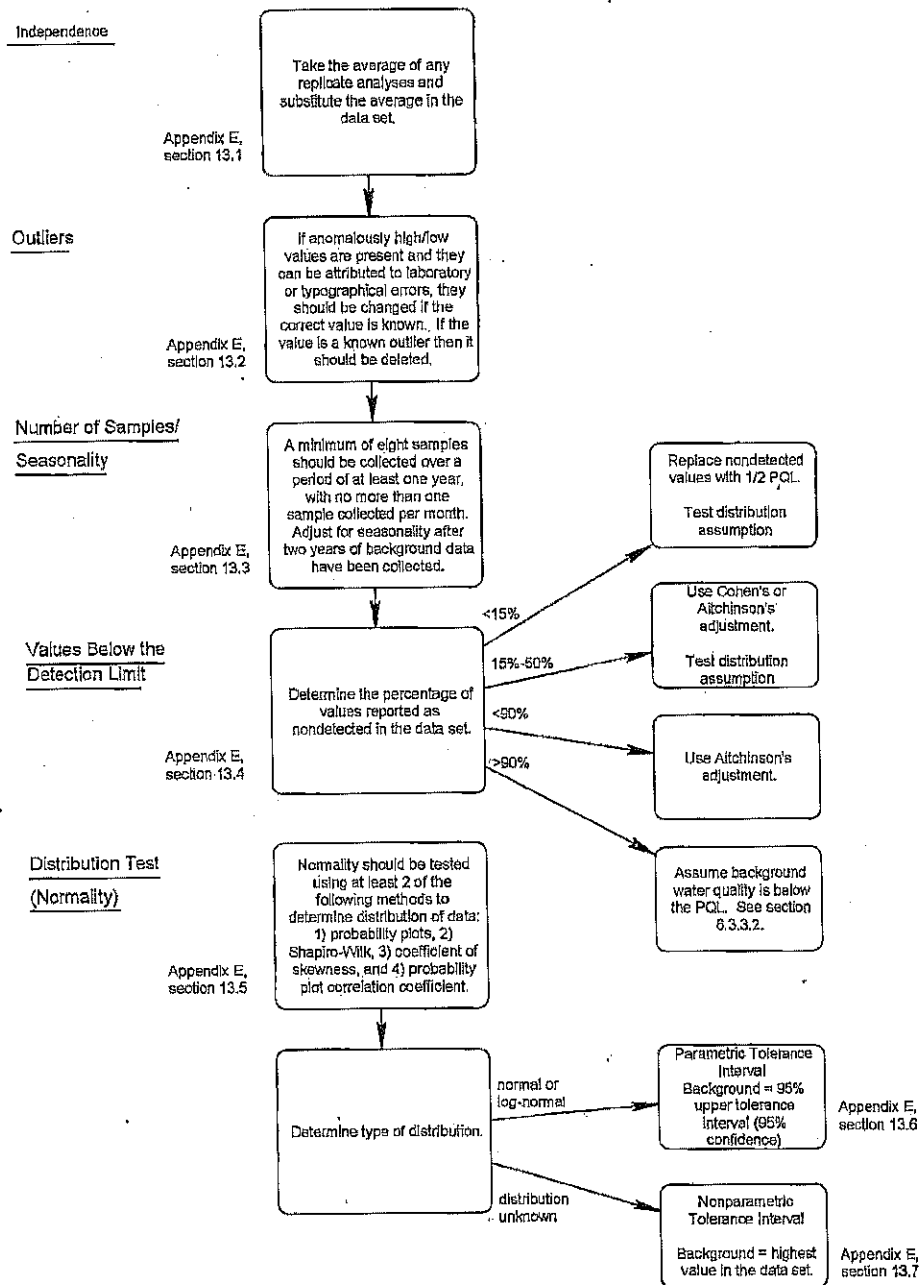


Figure 6.3 Statistical Procedure for Establishing Enforcement

### 6.3.3.2 Establishing Enforcement Limits When Background Water Quality Is Less Than the Detection Limit

If background water quality, is at a level below the PQL (practical quantitation limit), then the PQL is the ground water protection goal. This number should be written in Box B on page 72 of figure 6.4.

PQL's are the minimum concentration that a compound can be reliably quantified within specified limits of precision and accuracy during routine laboratory operating conditions. Method detection limits (MDL's) are not consistent numbers which can be accurately reproduced. Therefore, MDL's cannot provide a uniform measurement of concentrations that should be used to establish limits. The PQL is several times greater than the MDL, therefore, a measured value at or above the PQL has a lower chance of error than measures below the PQL. By using the PQL, compliance can be assessed with a greater degree of confidence. Recommended analytical methods and the associated PQL's are listed in Appendix A, table 9.1. The PQL's are dynamic numbers that will change as analytical capabilities change.

When background water quality is at a level less than the detection limit, then the ground water protection goal is established at the PQL. Compliance cannot be determined at levels below the PQL, since by definition, this is the lower level that a analytical laboratory can reliably detect concentrations in ground water. Compliance may not be definitively determined by using the PQL, but it will act as the first reliable and reproducible point which can be accurately measured. Therefore, the ground water protection goal should be established at the PQL; however,

all detected values must be reported, regardless if an enforcement limit violation has been exceeded.

### 6.3.6 Constituents Without Criteria

Constituents which do not have criteria established by Chapter 173-200 WAC, but that are harmful to either human health or the environment are also regulated by the standards and require that limits be established, [WAC 173-200-040 (3)]. A reasonable treatment technology should be used which will best protect background water quality. *Where a criterion is not established for a contaminant, the enforcement limit in ground water shall not exceed the PQL, except where there is evidence that a lower concentration would better protect human health and the environment, the department may establish a more stringent enforcement limit. Or if clear and convincing evidence can be provided to the department that an alternative concentration will provide protection to human health and the environment, the department may establish an enforcement limit higher than the PQL.* [WAC 173-200-050(4)(a)&(b)]. The enforcement limit for constituents without criteria shall be set equal to the PQL.

For example, xylene is not a carcinogen, and it does not have an established maximum contaminant level (MCL), yet elevated concentrations are toxic for human consumption; therefore, it is important to establish enforcement limits for xylene if it is a constituent of concern.

Another example is total nitrogen. WAC 173-200-040 includes a criterion only for nitrate; however, other forms of nitrogen readily convert to nitrate in the environment. Therefore, it is important to establish

enforcement limits for all forms of nitrogen. Total nitrogen consists of nitrate, nitrite, ammonia, and organic nitrogen.

Degradation products of contaminants should also be included when establishing enforcement limits. For example, tetrachloroethylene degrades to trichloroethylene which degrades to dichloroethylene which degrades to vinyl chloride.

### 6.3.7 Instances When an Enforcement Limit Can Exceed a Criterion

Enforcement limits are established on a site-by-site basis. Ideally they are set below the criterion; however, there are some instances where an enforcement limit *can* be established above a criterion. *In each of the following situations the wastestream must meet AKART.* These six instances are described below

#### 6.3.7.1 Natural Ground Water Quality Exceeds the Criterion

*[WAC 173-200-050 (3)(b)(i)] when the natural ground water quality for a contaminant exceeds the criterion, the enforcement limit for that contaminant shall be equal to the natural level.* When natural water quality exceeds the upper limit of the enforcement limit then the natural water quality concentration is the value which must be achieved. If the facility withdraws water from the uppermost aquifer to use as source water for their operations, and the natural water quality is greater than the criterion, then an enforcement limit must be established at the point of

compliance in ground water at the natural water quality concentration.

#### 6.3.7.2 Background Water Quality Exceeds the Criterion

*[WAC 173-200-050 (3)(b)(ii)] when the background ground water quality exceeds a criterion, the enforcement limit at the point of compliance shall not exceed the background ground water quality for that contaminant. Enforcement limits based on elevated background ground water quality shall in no way be construed to allow continued pollution of the receiving ground water.*

When background water quality exceeds the upper limit of the enforcement limit, then the background water quality concentration is the value which must be achieved. If the background water quality concentration of a contaminant is greater than the criterion, and the facility withdraws water from the uppermost aquifer to use as source water for their operations, then an enforcement limit must be established in ground water at the point of compliance at the background water quality concentration. A monitoring limit must also be established in the effluent at the criteria to assure that ground water will not continue to be degraded. The standards recognize that under these circumstances the permittee should not be held responsible for ground water quality which was inherited; however, the permittee should not be contributing to its continued degradation. Even if a treatment technology has been determined to be AKART, continued degradation cannot be allowed simply because background water quality is already degraded. Elevated background water quality does not preclude a discharge from occurring to that aquifer.

### 6.3.7.3 PQL Greater Than Criterion

*[WAC 173-200-050 (3)(b)(iii)] when a criterion is less than the practical quantification level, the enforcement limit shall be established in an alternate location to provide a realistic estimate that the criterion shall not be exceeded in the ground water.*

The criterion still applies to ground water even if a criterion cannot be reliably measured due to the analytical capabilities of a laboratory. Monitoring limits may also be established in other media to assure compliance. If the PQL is greater than the criterion, then an enforcement limit should be established in the effluent or somewhere within the treatment process at the concentration of the PQL in order to demonstrate that the criterion will not be exceeded in the ground water. An alternate point of compliance may be established to assure that the enforcement limit will not exceed the criteria in ground water.

Modeling is a tool which can be used to demonstrate compliance if the model is calibrated and is suitable for assessing the activity and the local hydrogeologic conditions. A model may include literature values on efficiency of photodegradation, biodegradation, volatilization or attenuation of the contaminants when site specific conditions support these assumptions. The permittee is responsible for making this demonstration to Ecology.

Other methods should be considered to assure that the criterion will not be exceeded. These include:

1. Minimizing the waste stream
2. Reducing the contaminant load

3. Recycling
4. Using alternative treatment methods
5. Using alternative materials in the facility's operation

When a criterion is at a level less than the detection limit, then an enforcement limit may be established at the PQL. Compliance cannot be determined at levels below the PQL, since by definition, this is the lower level that an analytical laboratory can reliably detect concentrations in ground water. Compliance may not be definitively determined by using the PQL, but it will act as the first reliable and reproducible point which can be accurately measured. Therefore, the enforcement limit should be established at the PQL; however, all detected values must be reported, regardless if an enforcement limit violation has occurred. This allows Ecology to assess whether ground water degradation has occurred when the criteria is established at a level less than the PQL.

### 6.3.7.4 Secondary Standards In Non-Potable Water

*[WAC 173-200-050 (3)(b)(iv)] when naturally nonpotable ground water exceeds a secondary contaminant criterion, an enforcement limit for a secondary contaminant may exceed a criterion when it can be demonstrated to the department's satisfaction that: 1) the environment is protected, 2) that human health is protected, 3) that existing and future beneficial uses are not harmed, and 4) that AKART will not result in concentrations less than the secondary contaminant criteria. This exclusion applies only to secondary standards in ground water which is designated as nonpotable prior to human influences.*

### 6.3.7.5 Isolated Artificial Or Seasonal Ground Water

*[WAC 173-200-050 (3)(b)(v)] enforcement limits may exceed criteria in isolated artificial or seasonal ground waters when all of the following conditions exist: 1) the isolated artificial or seasonal ground waters are of insufficient quantity for use as a drinking water source, 2) the established enforcement limits will not cause harm to existing and future beneficial uses including support of seasonal wetlands, 3) accumulation of contaminants will not cause adverse acute or chronic effects to human health, and 4) accumulation of contaminants will not cause adverse acute or chronic effects to the environment. Isolated artificial or isolated seasonal ground water may be degraded beyond a criterion when there is insufficient water to be used as a drinking water source, when the discharge will not degrade an existing or future beneficial use, and when the accumulation of contaminants will not cause adverse acute or chronic effects to human health or the environment.*

The permittee must provide evidence demonstrating that the ground water is isolated, and artificial or seasonal. *Ground water must be isolated to meet this categorical exemption.* Isolated ground water is defined as ground water which is fully separated from other ground waters and surface waters by an impermeable layer of rock or strata. A hydrogeologic report is required to demonstrate that no cross-connection is evident, and that no cross-contamination will occur. A demonstration must also be made by the permittee that the confining layers are continuous and will not be breached by current or future practices. *A confined aquifer is not necessarily considered to be isolated or impermeable.* Confined aquifers are often discontinuous

and have preferential pathways through which contaminants can migrate through the confining layer into adjacent aquifers. Even a confining layer with a very low permeability will transmit some quantity of water.

Seasonal ground water is ground water that exists for a temporary period of the year and is usually associated with a particular activity or phenomenon. A demonstration must be made that cross-contamination to other ground waters or surface waters will not occur. Ground water monitoring should be strongly considered to monitor any effects of cross-contamination to other aquifers.

### 6.3.7.6 Net Environmental Benefit

*[WAC 173-200-050 (3)(b)(vi)] in rare circumstances the department may allow an enforcement limit to exceed a criterion for an activity for a period not to exceed five years without reconsideration of the evidence presented and if all of the following conditions are met: 1) the permit holder or responsible person demonstrates to the department's satisfaction that an enforcement limit that exceeds a criterion is necessary to provide greater benefit to the environment as a whole and to protect other media such as air, surface water, soil, or sediments, 2) the activity has been demonstrated to be in the overriding public interest of human health and the environment, 3) the department selects from a variety of control technologies available for reducing and eliminating contamination from each potentially affected media, the technologies that minimize impacts to all affected media, and 4) the action has been approved by the director of the department or the director's designee.*

Net Environmental Benefit is an exclusion which can be used to protect media other than



ground water or preserve a special or unique habitat. A discharge to ground water may exceed a criterion if it can be demonstrated that this discharge will provide a greater benefit to the environment as a whole, rather than discharging to surface water, soils, sediment or air. This categorical exemption is not simply an environmental tradeoff, it is a net environmental benefit. An overall environmental advantage must be demonstrated. No economic factors are considered.

The following items must be characterized for each media in order to evaluate the net environmental benefit:

- Identify all available forms of treatment technology.
- Determine AKART (chapter 4.0).
- Determine the potential impacts to each media.
- Determine the relative risk by analyzing the various exposure routes and the associated health risks.
- Demonstrate the net environmental benefit.
- Determine if the discharge is in the overriding public interest of human health and the environment.

AKART must still be applied to the wastes to ensure that ground water will not be used as a receptacle for wastes. AKART should be selected based on its capacity to minimize the impacts to all media and the public must have the opportunity to comment on this activity. This practice must be approved by Ecology and reevaluated every five years.

### 6.3.7.7 Option to Demonstrate Overriding Public Interest

If AKART does not provide treatment of the wastewater below the upper level, and none of the specified six circumstances which allow an enforcement limit to be established above the criterion exist, then an opportunity is available to demonstrate that other conditions are present which warrant the discharge to occur.

These considerations are defined under WAC 173-200-050(3)(a)(ix) and include the following:

1. An alleviation of a public health concern
2. A net improvement to the environment
3. Socioeconomic benefits

These considerations must be presented in a public notice or a public forum to gather input. A presentation must be made to the director outlining these considerations and the comments received through the public forum. A decision whether the permit should be issued will be made by the director or the director's designee based on this information.

## 6.4 Early Warning Values

*Early warning values means a concentration set in accordance with WAC 173-200-070 that is a percentage of a ground water quality enforcement limit, [WAC 173-200-020(10)].* Early warning values act as a trigger to detect increasing contaminant concentrations prior to the degradation of a beneficial use.

Early warning values are effective tools for protecting the environment from degradation and alerting the permittee that concentrations are increasing. This allows protective measures to be implemented which will prevent the activity from exceeding an enforcement limit or a criterion. Early warning values should be used in conjunction with enforcement limits. They can be established in the effluent, the ground water, surface water, the vadose zone or within the treatment process.

An exceedance of an early warning value does not necessarily constitute a violation of the standards. A violation occurs only if the applicant fails to report an exceedance of an early warning value. *It shall not be considered a violation of these rules when contaminants are detected in concentration exceeding an early warning value, but not exceeding an enforcement limit, unless there is failure to notify the department, [WAC 173-200-070 (5)].* If an enforcement limit is established close to the background water quality, an early warning value established in the ground water may not be useful if it is consistently violated as the background water quality varies naturally. Similarly, early warning values may not be useful for carcinogens if the criterion is less than the PQL. Early

warning values are useful to identify trends in water quality. Indicator parameters, such as chloride, can often give an early indication of contaminant plume migration.

Early warning values can be established following the flow chart (figure 6.3), and are further described in Appendix E. *Early warning values are established halfway between the background water quality and the enforcement limit. The early warning value can be calculated using the following equation:*

$$EWV = \frac{BWQ + EL}{2}$$

*EWV = Early Warning Value*

*BWQ = Background Water Quality*

*EL = Enforcement Limit.*

Early warning values are optional except when an alternative point of compliance is established. However, it is advantageous to use early warning values whenever possible to detect increasing contaminant trends in ground water.

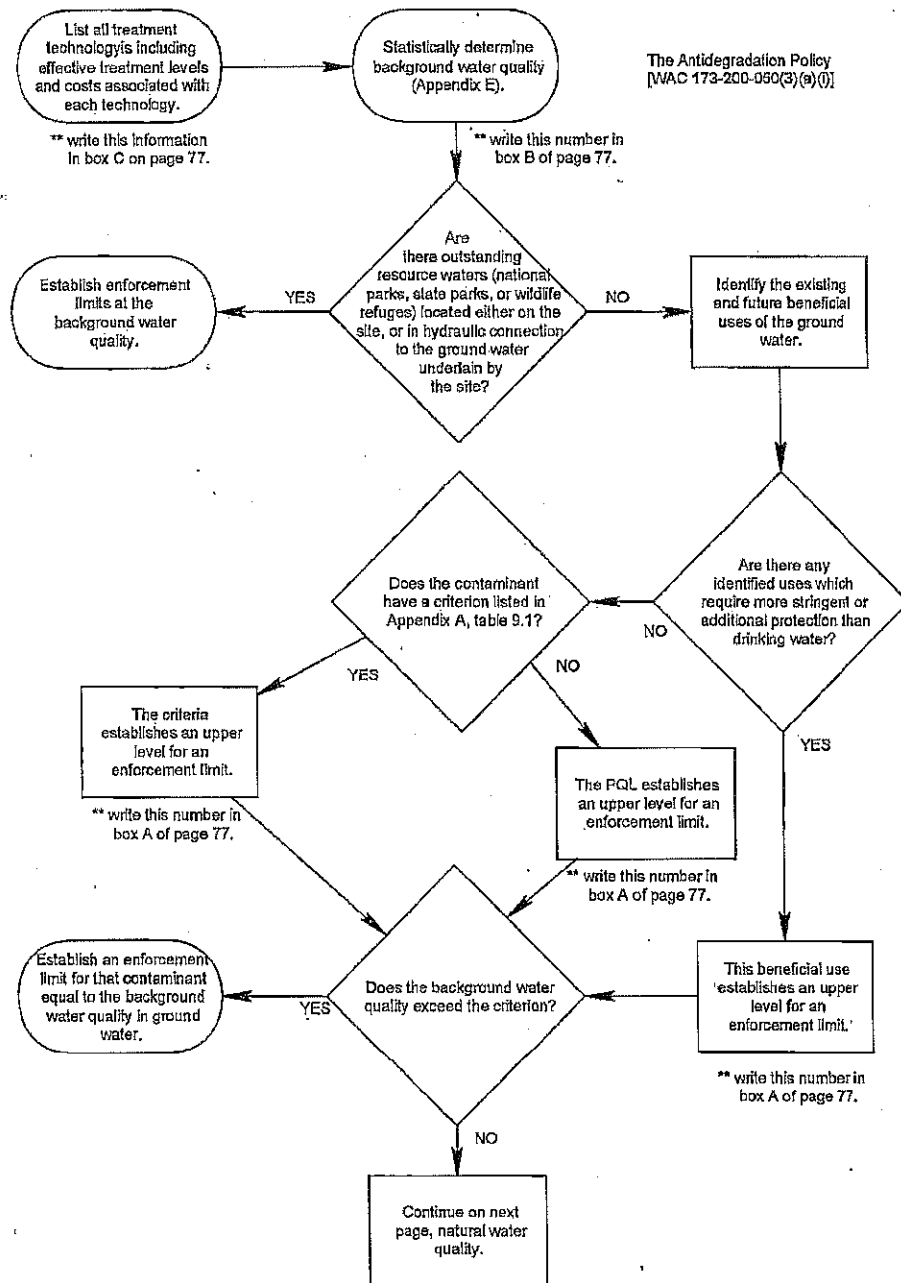
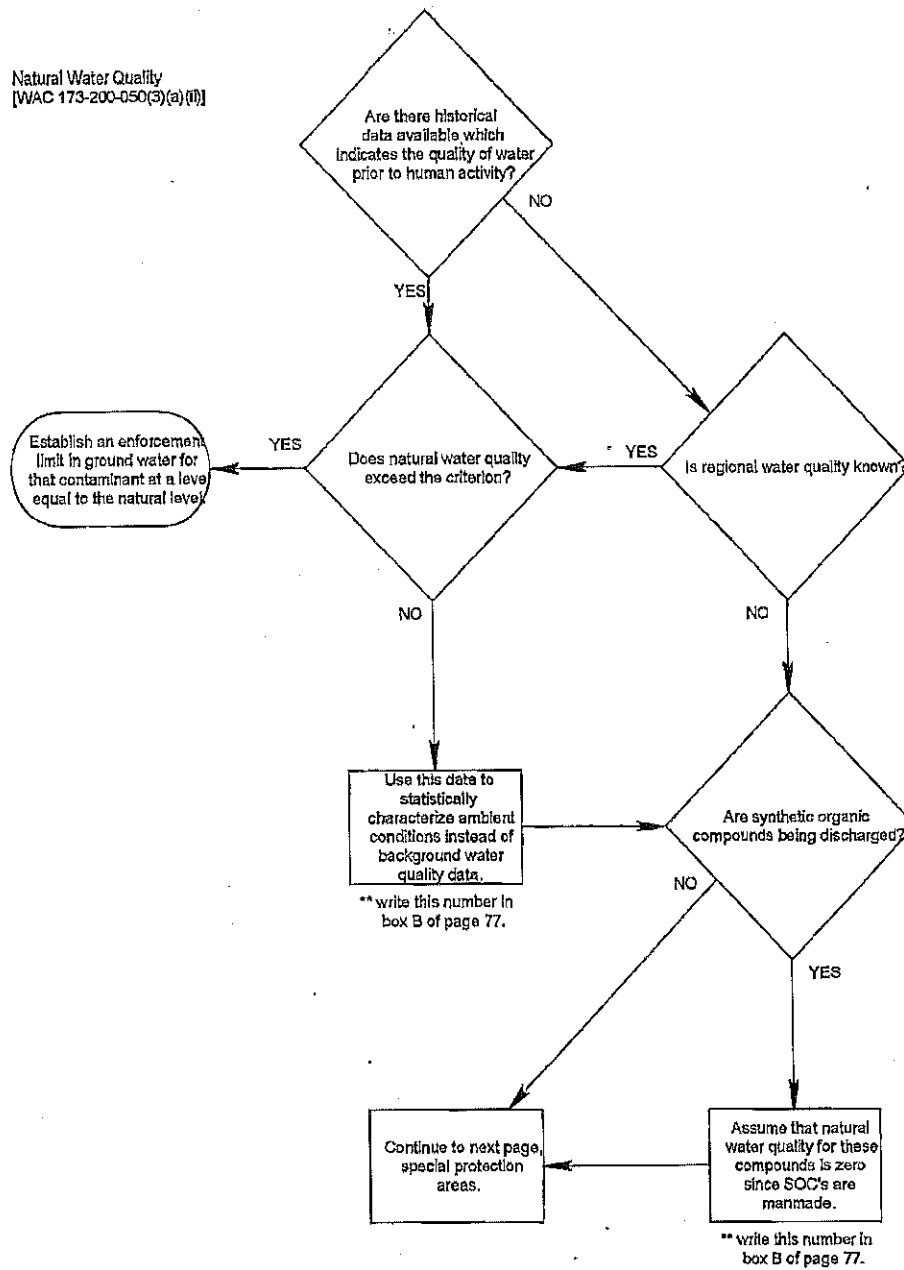
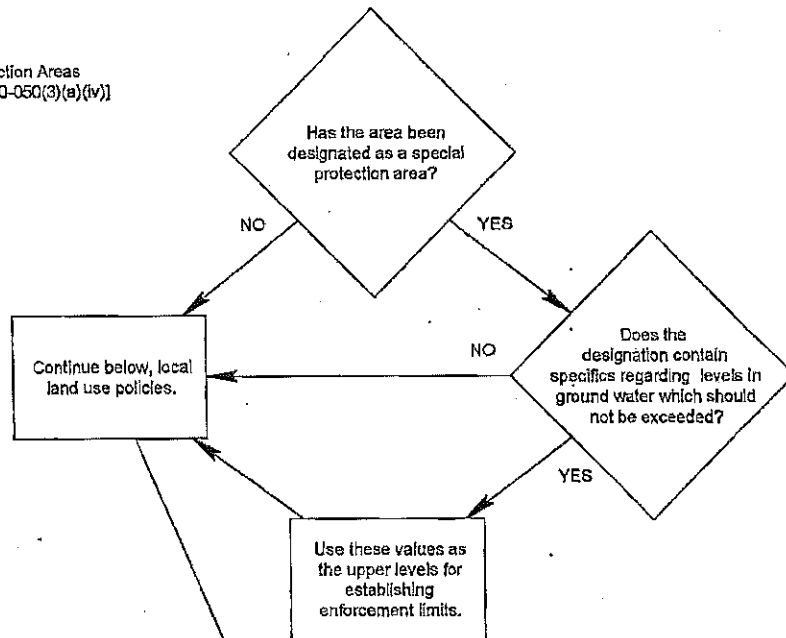


Figure 6.4 Establishing Enforcement Limits

Natural Water Quality  
[WAC 173-200-050(3)(a)(ii)]

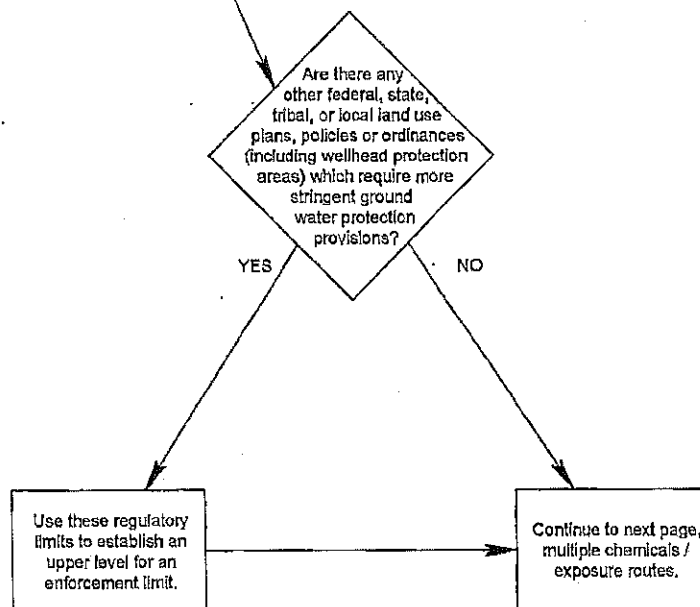


Special Protection Areas  
[WAC 173-200-050(3)(a)(iv)]



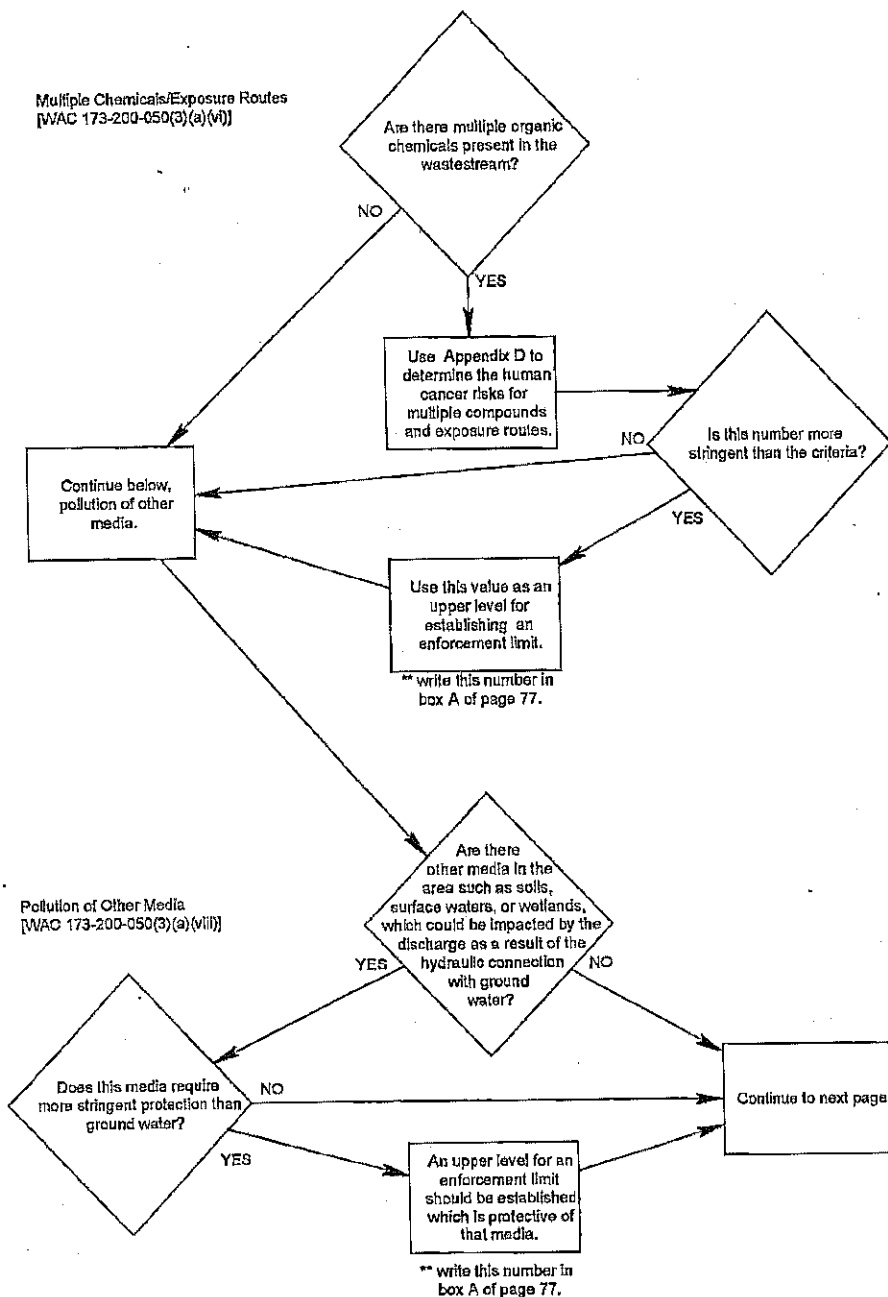
\*\* write this number in box A of page 77.

Local Land Use Policies  
[WAC 173-200-050(3)(a)(vii)]



\*\* write this number in box A of page 77.

Multiple Chemicals/Exposure Routes  
[WAC 173-200-050(3)(a)(vi)]



BOX A

The lowest number in this box describes the upper level where an enforcement limit can be established. If any of these values are less than the PQL, than the PQL is upper level.

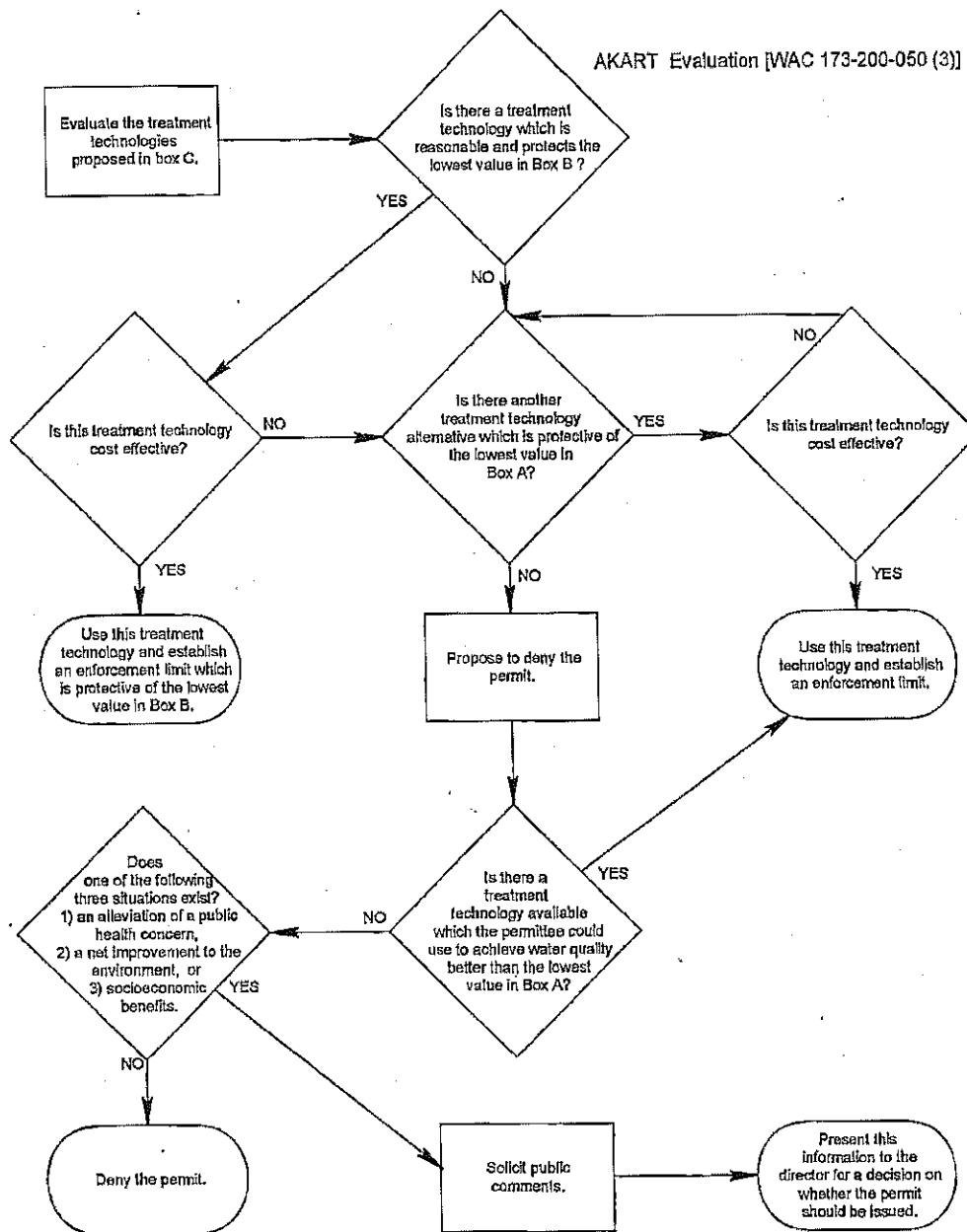
BOX B

The lowest number in this box describes the ground water protection goal. If Box B is greater than or equal to Box A, the Box B is the value which must be achieved.

BOX C

The treatment technology alternative which is reasonable and best protects background water quality should be advocated. If this goal cannot be protected, the next best reasonable treatment technology alternative should be used and the permittee should explain the rationale why background water quality could not be maintained in a public notice or public forum. If a reasonable treatment technology alternative cannot achieve the upper level in Box A, then Ecology should propose to deny the permit. However, the permittee may also re-evaluate the alternatives and select to use one which will achieve at least the upper level listed in Box A. Otherwise one of the following three demonstrations must be explained and discussed in a public forum. These include: 1) an alleviation of a public health concern, 2) a net improvement to the environment, or 3) socioeconomic benefits. The rationale and the public comments will be consolidated and presented to the director of Ecology or their designee, who will make a determination whether this discharge is necessary to occur.

See next page of this figure for further details.





## 7.0 Enforcement

This chapter of the guidance describes the enforcement procedures which should be followed when either an early warning value, an enforcement limit or a criterion have been exceeded. The enforcement actions described in this chapter apply to wastewater discharge activities permitted under the State Waste Discharge Permit Program (Chapter 173-216 WAC). Other activities regulated by Ecology are subject to specific enforcement procedures outlined in their specific permitting guidelines (section 1.3). Degradation of ground water quality by those activities which are not regulated by Ecology will be resolved with the agency or jurisdiction that has direct regulatory control.

The Ground Water Quality Standards are enforced through mechanisms similar to other water quality enforcement procedures. These procedures are outlined in the Department of Ecology's "Enforcement Policy" (1990).

### 7.1 Enforcement Actions

*No person shall engage in an activity which violates or causes a violation of this chapter, WAC 173-200-100 (2).* Dischargers are responsible for ensuring that their activities are in compliance with the requirements of this rule for all ground water in all places at all times, WAC 173-200-100 (1). Table 7.1 describes the recommended action which should be taken when a numerical limit has been violated.

There are some instances when a violation is not subject to enforcement action. These instances are described below:

1. *A facility may temporarily exceed an enforcement limit at the point of compliance while the activity is under an enforceable schedule of compliance. [WAC 173-200-050 (7)]*
2. Enforcement through a compliance order or permit modification shall precede any civil or criminal penalty [WAC 173-200-100 (8)] if a permittee violates the Ground Water Quality Standards but is in compliance with the best management practices adopted by the following rules:
  - a) WAC 173-304-300 (4), Solid Waste Handling--Sewage sludge shall be utilized or disposed according to the "Municipal and Domestic Sludge Utilization Guidelines".
  - b) RCW 15.58.150 (2)(c), Pesticide Control Act--Pesticides shall be used according to label directions or according to the Washington State Department of Agriculture regulations.
  - c) WAC 16-228-180 (1), Pesticide regulations--A pesticide license may be denied, revoked or suspended if the provisions are violated.
  - d) WAC 16-228-185, Pesticide regulations--Restrictions on the holding, handling, using, or disposing of pesticides and their containers.
3. Enforcement through a compliance order or permit modification shall precede any civil or criminal penalty for permit holders in compliance with the terms and conditions of a department permit but are violating the Ground Water Quality Standards [WAC 173-200-100 (5)].

4. Limits are established for a permit cycle (5 years or less). If a violation occurs, the applicant has the option to demonstrate to Ecology that the violation is due to varia-

tions in background water quality. This demonstration must be made with statistically valid methods of evaluation.

**Table 7.1 Recommended Action When Numeric Violations Occur.**

	Criteria	Enforcement Limit	Early Warning Value
<b>Violation</b>	A violation occurs if a numerical criterion (appendix A, table 9.1) is exceeded. If an enforcement limit is established at a value greater than a criterion, then this column should be disregarded.	Two consecutive exceedances of an enforcement limit for the same parameter at the same well constitutes a violation.	An exceedance of an early warning value does not necessarily constitute a violation. A violation occurs only if the applicant fails to report an exceedance to the department.
<b>Notification</b>	*Immediate verbal notification to Ecology's regional office. Written notification with the monitoring report. Prepare report documenting conditions and discussing options to reduce impacts.	*Immediate verbal notification to Ecology's regional office. Written notification with the monitoring report. Prepare report documenting conditions and discussing options to reduce impacts.	Verbal notification to Ecology's regional office within 10 days, [WAC 173-200-070(5)]. Written notification with the monitoring report. If an EWV is exceeded, measures should be taken to avoid exceeding an EL in the future.
<b>Resample</b>	*Immediately	*Immediately	
<b>Modify Monitoring Plan</b>		Expansion of parameter list for monitoring or increase frequency may be necessary if sampling results violate ELs.	
<b>Trend Analysis</b>	Optional	Optional	Optional
<b>Prepare report documenting conditions and discussing options to reduce impacts</b>	As required by Ecology	As required by Ecology	As required by Ecology
<b>Enforcement Action</b>	According to Ecology's Enforcement Policy	According to Ecology's Enforcement Policy	According to Ecology's Enforcement Policy

\*Immediate is defined within 48 hours

\*\*A required resampling is considered a verification sample and will not be considered a separate sample or violation.

## 7.2 Contingency Plans

Ecology may require a spill plan or a contingency plan depending upon the individual circumstances. A contingency plan should be prepared which describes the specific actions which will be taken if a violation occurs. A contingency plan should identify all the equipment and structural features which could potentially fail, resulting in immediate public health or environmental impacts. A plan should be developed which describes the action necessary to remedy impacts of such an event in a timely manner. This includes an outline of the procedures for controlling the release, the proposed methods for evaluating the extent of contamination, and alternatives for remediation. An emergency response coordinator should also be identified. This person is responsible for notifying Ecology and implementing the contingency plan in the event of a release to the environment which may cause imminent or substantial endangerment to public health or the environment.

## 7.3 Notification

Written notification of a violation must be reported to Ecology with the following information:

- Concentration of other contaminants measured.
- Monitoring locations and dates sampled.
- Previous contaminant concentrations.
- Other relevant information.

Notification should be made to the appropriate location:

### Central Regional Office (Yakima)

(509) 575-2491

Counties: Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima.

### Eastern Regional Office (Spokane)

(509) 456-2926

Counties: Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman.

### Northwest Regional Office (Bellevue)

(206) 649-7000

Counties: Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom.

### Southwest Regional Office (Lacey)

(360) 407-6300

Counties: Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum.

### Hanford Site Discharges (Kennewick)

(509) 735-7581

### Industrial Section (Headquarters - Lacey)

(360) 407-6916

- Concentration of contaminants which exceeded an early warning value, an enforcement limit or a criterion.



2. Determine K values tabulated in table 13.7 based on the sample size (n), the confidence (95%), and the coverage (95%);
3. Calculate the tolerance interval:

$$\text{Tolerance Interval} = \bar{X} + KS$$

4. This value defines background water quality, (chapter 4.0).

(EPA, 1989).

### 13.7 Nonparametric Tolerance Intervals

Unlike parametric statistical methods, nonparametric tests do not rely on estimating parameters, such as the mean and the standard deviation. Nonparametric statistics are based on the ranks of observations. Typically they are used for grossly non-normal and non-transformable distributions. They are also used when there is a high percentage of values below the detection limit, or if the underlying probability distribution model is unknown.

Nonparametric tolerance intervals require a large number of samples (n = 59) in order to achieve a 95% coverage. Table 13.8 can be used to determine the coverage achieved with fewer samples. The minimum number of samples required to statistically characterize ground water (8), achieves a coverage of only 69%. If a 95% coverage cannot be achieved, a parametric tolerance interval should be used to calculate background water quality. Even though the data may not display a strong normal or lognormal distribution, this method is advocated to maintain a higher degree of coverage.

The nonparametric tolerance interval is calculated as follows:

1. Order the data, but do not assign ranks to numbers. There is no special handling of the values below the detection limit.
2. Use the maximum value as the upper tolerance limit.
3. The derived upper tolerance limit defines background water quality, (chapter 4.0).

(EPA, 1992b).

**Table 13.8 Minimum Coverage of 95% Confidence  
Nonparametric Tolerance Intervals**

Number of Observations n	(maximum)	(2nd largest)	Number of Observations n	(maximum)	(2nd largest)
1	5.0	—	31	90.8	85.6
2	22.4	2.6	32	91.1	86.0
3	36.8	13.6	33	91.3	86.4
4	47.3	24.8	34	91.6	86.8
5	54.9	34.2	35	91.8	87.2
6	60.7	41.8	36	92.0	87.4
7	65.2	48.0	37	92.2	87.8
8	68.8	53.0	38	92.4	88.2
9	71.7	57.0	39	92.6	88.4
10	74.1	60.6	40	92.8	88.6
11	76.2	63.6	41	93.0	89.0
12	77.9	66.2	42	93.1	89.2
13	79.4	68.4	43	93.3	89.4
14	80.7	70.4	44	93.4	89.6
15	81.9	72.0	45	93.6	89.8
16	82.9	73.6	46	93.7	90.0
17	83.8	75.0	47	93.8	90.2
18	84.7	76.2	48	93.9	90.4
19	85.4	77.4	49	94.1	90.6
20	86.1	78.4	50	94.2	90.8
21	86.7	79.4	55	94.7	91.6
22	87.3	80.2	60	95.1	92.4
23	87.8	81.0	65	95.5	93.0
24	88.3	81.8	70	95.8	93.4
25	88.7	82.4	75	96.1	93.8
26	89.1	83.0	80	96.3	94.2
27	89.5	83.6	85	96.5	94.6
28	89.9	84.2	90	96.7	94.8
29	90.2	84.6	95	96.9	95.0
30	90.5	85.2	100	97.0	95.4

(EPA, 1992)

# **Attachment 8**

(Case No. 351998)

# Chapter 173-201A WAC

## WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE STATE OF WASHINGTON

### WAC

#### PART I - INTRODUCTION

173-201A-010	Purpose.	
173-201A-020	Definitions.	173-201A-060

#### PART II - DESIGNATED USES AND CRITERIA

173-201A-200	Fresh water designated uses and criteria.	
173-201A-210	Marine water designated uses and criteria.	
173-201A-230	Establishing lake nutrient criteria.	
173-201A-240	Toxic substances.	
173-201A-250	Radioactive substances.	
173-201A-260	Natural conditions and other water quality criteria and applications.	173-201A-070

#### PART III - ANTIDEGRADATION

173-201A-300	Description.	
173-201A-310	Tier I—Protection and maintenance of existing and designated uses.	173-201A-080
173-201A-320	Tier II—Protection of waters of higher quality than the standards.	
173-201A-330	Tier III—Protection of outstanding resource waters.	
173-201A-400	Mixing zones.	173-201A-100
173-201A-410	Short-term modifications.	

#### PART IV - TOOLS FOR APPLICATION OF CRITERIA AND USES

173-201A-420	Variance.	
173-201A-430	Site-specific criteria.	
173-201A-440	Use attainability analysis.	173-201A-110
173-201A-450	Water quality offsets.	

#### PART V - IMPLEMENTATION OF STANDARDS

173-201A-500	Achievement considerations.	
173-201A-510	Means of implementation.	
173-201A-520	Monitoring and compliance.	
173-201A-530	Enforcement.	

#### PART VI - USE DESIGNATIONS FOR WATERS OF THE STATE

173-201A-600	Use designations—Fresh waters.	
173-201A-602	Table 602—Use designations for fresh waters by water resource inventory area (WRIA).	
173-201A-610	Use designations—Marine waters.	
173-201A-612	Table 612—Use designations for marine waters.	173-201A-120
		173-201A-130

#### DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

173-201A-030	General water use and criteria classes. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-030, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-030, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.	173-201A-140
173-201A-040	Toxic substances. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-040, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-040, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-240.	173-201A-150
173-201A-050	Radioactive substances. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-050, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-050, filed	173-201A-160

11/25/92, effective 12/26/92.] Decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-250.

General considerations. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-060, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-060, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.

Antidegradation. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-070, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.

Outstanding resource waters. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-080, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.

Mixing zones. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-100, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-400.

Short-term modifications. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-110, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-110, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-410.

General classifications. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-120, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.

Specific classifications—Freshwater. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-130, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-130, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.

Specific classifications—Marine water. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-140, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-140, filed 11/25/92, effective 12/26/92.] Repealed by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW.

Achievement considerations. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-150, filed 11/25/92, effective 12/26/92.] Decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-500.

Implementation. [Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-160, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW.



- WSR 92-24-037 (Order 92-29), § 173-201A-160, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-510.
- 173-201A-170 Surveillance. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-170, filed 11/25/92, effective 12/26/92.] Amended and decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-520.
- 173-201A-180 Enforcement. [Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-180, filed 11/25/92, effective 12/26/92.] Decodified by WSR 03-14-129 (Order 02-14), filed 7/1/03, effective 8/1/03. Statutory Authority: Chapters 90.48 and 90.54 RCW. Recodified as § 173-201A-530.

## PART I - INTRODUCTION

**WAC 173-201A-010 Purpose.** (1) The purpose of this chapter is to establish water quality standards for surface waters of the state of Washington consistent with public health and public enjoyment of the waters and the propagation and protection of fish, shellfish, and wildlife, pursuant to the provisions of chapter 90.48 RCW. All actions must comply with this chapter. As part of this chapter:

(a) All surface waters are protected by numeric and narrative criteria, designated uses, and an antidegradation policy.

(b) Based on the use designations, numeric and narrative criteria are assigned to a water body to protect the existing and designated uses.

(c) Where multiple criteria for the same water quality parameter are assigned to a water body to protect different uses, the most stringent criteria for each parameter is to be applied.

(2) Surface waters of the state include lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands, and all other surface waters and water courses within the jurisdiction of the state of Washington.

(3) This chapter will be reviewed periodically by the department and appropriate revisions will be undertaken.

(4) WAC 173-201A-200 through 173-201A-260 and 173-201A-600 through 173-201A-612 describe the designated water uses and criteria for the state of Washington. These criteria were established based on existing and potential water uses of the surface waters of the state. Consideration was also given to both the natural water quality potential and its limitations. Compliance with the surface water quality standards of the state of Washington requires compliance with chapter 173-201A WAC, Water quality standards for surface waters of the state of Washington, chapter 173-204 WAC, Sediment management standards, and applicable federal rules.

[Statutory Authority: RCW 90.48.035. WSR 11-09-090 (Order 10-10), § 173-201A-010, filed 4/20/11, effective 5/21/11. Statutory Authority: Chapters 90.48 and 90.54 RCW. WSR 03-14-129 (Order 02-14), § 173-201A-010, filed 7/1/03, effective 8/1/03. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-010, filed 11/25/92, effective 12/26/92.]

**WAC 173-201A-020 Definitions.** The following definitions are intended to facilitate the use of chapter 173-201A WAC:

**"1-DMax" or "1-day maximum temperature"** is the highest water temperature reached on any given day. This measure can be obtained using calibrated maximum/minimum thermometers or continuous monitoring probes having sampling intervals of thirty minutes or less.

**"7-DADMax" or "7-day average of the daily maximum temperatures"** is the arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-DADMax for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date.

**"Action value"** means a total phosphorus (TP) value established at the upper limit of the trophic states in each ecoregion (see Table 230(1)). Exceedance of an action value indicates that a problem is suspected. A lake-specific study may be needed to confirm if a nutrient problem exists.

**"Actions"** refers broadly to any human projects or activities.

**"Acute conditions"** are changes in the physical, chemical, or biologic environment which are expected or demonstrated to result in injury or death to an organism as a result of short-term exposure to the substance or detrimental environmental condition.

**"AKART"** is an acronym for "all known, available, and reasonable methods of prevention, control, and treatment." AKART shall represent the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge. The concept of AKART applies to both point and nonpoint sources of pollution. The term "best management practices," typically applied to nonpoint source pollution controls is considered a subset of the AKART requirement.

**"Background"** means the biological, chemical, and physical conditions of a water body, outside the area of influence of the discharge under consideration. Background sampling locations in an enforcement action would be up-gradient or outside the area of influence of the discharge. If several discharges to any water body exist, and enforcement action is being taken for possible violations to the standards, background sampling would be undertaken immediately up-gradient from each discharge.

**"Best management practices (BMP)"** means physical, structural, and/or managerial practices approved by the department that, when used singularly or in combination, prevent or reduce pollutant discharges.

**"Biological assessment"** is an evaluation of the biological condition of a water body using surveys of aquatic community structure and function and other direct measurements of resident biota in surface waters.

**"Bog"** means those wetlands that are acidic, peat forming, and whose primary water source is precipitation, with little, if any, outflow.

**"Carcinogen"** means any substance or agent that produces or tends to produce cancer in humans. For implementation of this chapter, the term carcinogen will apply to substances on the United States Environmental Protection Agency lists of A (known human) and B (probable human) carcinogens, and any substance which causes a significant increased incidence of benign or malignant tumors in a single, well conducted animal bioassay, consistent with the

**PART V - IMPLEMENTATION OF STANDARDS**

**WAC 173-201A-500 Achievement considerations.** To fully achieve and maintain the foregoing water quality in the state of Washington, it is the intent of the department to apply the various implementation and enforcement authorities at its disposal, including participation in the programs of the federal Clean Water Act (33 U.S.C. 1251 et seq.) as appropriate. It is also the intent that cognizance will be taken of the need for participation in cooperative programs with other state agencies and private groups with respect to the management of related problems. The department's planned program for water pollution control will be defined and revised annually in accordance with section 106 of said federal act. Further, it shall be required that all activities which discharge wastes into waters within the state, or otherwise adversely affect the quality of said waters, be in compliance with the waste treatment and discharge provisions of state or federal law.

[Statutory Authority: Chapters 90.48 and 90.54 RCW. WSR 03-14-129 (Order 02-14), recodified as § 173-201A-500, filed 7/1/03, effective 8/1/03. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-150, filed 11/25/92, effective 12/26/92.]

**WAC 173-201A-510 Means of implementation. (1) Permitting.** The primary means to be used for controlling municipal, commercial, and industrial waste discharges shall be through the issuance of waste discharge permits, as provided for in RCW 90.48.160, 90.48.162, and 90.48.260. Waste discharge permits, whether issued pursuant to the National Pollutant Discharge Elimination System or otherwise, must be conditioned so the discharges authorized will meet the water quality standards. No waste discharge permit can be issued that causes or contributes to a violation of water quality criteria, except as provided for in this chapter.

(a) Persons discharging wastes in compliance with the terms and conditions of permits are not subject to civil and criminal penalties on the basis that the discharge violates water quality standards.

(b) Permits must be modified by the department when it is determined that the discharge causes or contributes to a violation of water quality standards. Major modification of permits is subject to review in the same manner as the originally issued permits.

**(2) Miscellaneous waste discharge or water quality effect sources.** The director shall, through the issuance of regulatory permits, directives, and orders, as are appropriate, control miscellaneous waste discharges and water quality effect sources not covered by subsection (1) of this section.

**(3) Nonpoint source and storm water pollution.**

(a) Activities which generate nonpoint source pollution shall be conducted so as to comply with the water quality standards. The primary means to be used for requiring compliance with the standards shall be through best management practices required in waste discharge permits, rules, orders, and directives issued by the department for activities which generate nonpoint source pollution.

(b) Best management practices shall be applied so that when all appropriate combinations of individual best management practices are utilized, violation of water quality criteria shall be prevented. If a discharger is applying all best management practices appropriate or required by the depart-

ment and a violation of water quality criteria occurs, the discharger shall modify existing practices or apply further water pollution control measures, selected or approved by the department, to achieve compliance with water quality criteria. Best management practices established in permits, orders, rules, or directives of the department shall be reviewed and modified, as appropriate, so as to achieve compliance with water quality criteria.

(c) Activities which contribute to nonpoint source pollution shall be conducted utilizing best management practices to prevent violation of water quality criteria. When applicable best management practices are not being implemented, the department may conclude individual activities are causing pollution in violation of RCW 90.48.080. In these situations, the department may pursue orders, directives, permits, or civil or criminal sanctions to gain compliance with the standards.

(d) Activities which cause pollution of storm water shall be conducted so as to comply with the water quality standards. The primary means to be used for requiring compliance with the standards shall be through best management practices required in waste discharge permits, rules, orders, and directives issued by the department for activities which generate storm water pollution. The consideration and control procedures in (b) and (c) of this subsection apply to the control of pollutants in storm water.

**(4) General allowance for compliance schedules.**

(a) Permits, orders, and directives of the department for existing discharges may include a schedule for achieving compliance with water quality criteria contained in this chapter. Such schedules of compliance shall be developed to ensure final compliance with all water quality-based effluent limits in the shortest practicable time. Decisions regarding whether to issue schedules of compliance will be made on a case-by-case basis by the department. Schedules of compliance may not be issued for new discharges. Schedules of compliance may be issued to allow for: (i) Construction of necessary treatment capability; (ii) implementation of necessary best management practices; (iii) implementation of additional storm water best management practices for discharges determined not to meet water quality criteria following implementation of an initial set of best management practices; (iv) completion of necessary water quality studies; or (v) resolution of a pending water quality standards' issue through rule-making action.

(b) For the period of time during which compliance with water quality criteria is deferred, interim effluent limitations shall be formally established, based on the best professional judgment of the department. Interim effluent limitations may be numeric or nonnumeric (e.g., construction of necessary facilities by a specified date as contained in an ecology order or permit).

(c) Prior to establishing a schedule of compliance, the department shall require the discharger to evaluate the possibility of achieving water quality criteria via nonconstruction changes (e.g., facility operation, pollution prevention). Schedules of compliance may in no case exceed ten years, and shall generally not exceed the term of any permit.

**(5) Compliance schedules for dams:**

(a) All dams in the state of Washington must comply with the provisions of this chapter.

(b) For dams that cause or contribute to a violation of the water quality standards, the dam owner must develop a water quality attainment plan that provides a detailed strategy for achieving compliance. The plan must include:

(i) A compliance schedule that does not exceed ten years;

(ii) Identification of all reasonable and feasible improvements that could be used to meet standards, or if meeting the standards is not attainable, then to achieve the highest attainable level of improvement;

(iii) Any department-approved gas abatement plan as described in WAC 173-201A-200 (1)(f)(ii);

(iv) Analytical methods that will be used to evaluate all reasonable and feasible improvements;

(v) Water quality monitoring, which will be used by the department to track the progress in achieving compliance with the state water quality standards; and

(vi) Benchmarks and reporting sufficient for the department to track the applicant's progress toward implementing the plan within the designated time period.

(c) The plan must ensure compliance with all applicable water quality criteria, as well as any other requirements established by the department (such as through a total maximum daily load, or TMDL, analysis).

(d) If the department is acting on an application for a water quality certification, the approved water quality attainment plan may be used by the department in its determination that there is reasonable assurance that the dam will not cause or contribute to a violation of the water quality standards.

(e) When evaluating compliance with the plan, the department will allow the use of models and engineering estimates to approximate design success in meeting the standards.

(f) If reasonable progress toward implementing the plan is not occurring in accordance with the designated time frame, the department may declare the project in violation of the water quality standards and any associated water quality certification.

(g) If an applicable water quality standard is not met by the end of the time provided in the attainment plan, or after completion of all reasonable and feasible improvements, the owner must take the following steps:

(i) Evaluate any new reasonable and feasible technologies that have been developed (such as new operational or structural modifications) to achieve compliance with the standards, and develop a new compliance schedule to evaluate and incorporate the new technology;

(ii) After this evaluation, if no new reasonable and feasible improvements have been identified, then propose an alternative to achieve compliance with the standards, such as site specific criteria (WAC 173-201A-430), a use attainability analysis (WAC 173-201A-440), or a water quality offset (WAC 173-201A-450).

(h) New dams, and any modifications to existing facilities that do not comply with a gas abatement or other pollution control plan established to meet criteria for the water body, must comply with the water quality standards at the time of project completion.

(i) Structural changes made as a part of a department approved gas abatement plan to aid fish passage, described in WAC 173-201A-200 (1)(f)(ii), may result in system perfor-

mance limitations in meeting water quality criteria for that parameter at other times of the year.

[Statutory Authority: Chapters 90.48 and 90.54 RCW. WSR 03-14-129 (Order 02-14), amended and recodified as § 173-201A-510, filed 7/1/03, effective 8/1/03. Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-160, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-160, filed 11/25/92, effective 12/26/92.]

**WAC 173-201A-520 Monitoring and compliance.** A continuing surveillance program, to ascertain whether the regulations, waste disposal permits, orders, and directives promulgated and/or issued by the department are being complied with, will be conducted by the department staff as follows:

(1) Inspecting treatment and control facilities.

(2) Monitoring and reporting waste discharge characteristics.

(3) Monitoring receiving water quality.

[Statutory Authority: Chapters 90.48 and 90.54 RCW. WSR 03-14-129 (Order 02-14), Amended and recodified as § 173-201A-520, filed 7/1/03, effective 8/1/03. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-170, filed 11/25/92, effective 12/26/92.]

**WAC 173-201A-530 Enforcement.** To insure that the provisions of chapter 90.48 RCW, the standards for water quality promulgated herein, the terms of waste disposal permits, and other orders and directives of the department are fully complied with, the following enforcement tools will be relied upon by the department, in cooperation with the attorney general as it deems appropriate:

(1) Issuance of notices of violation and regulatory orders as provided for in RCW 90.48.120.

(2) Initiation of actions requesting injunctive or other appropriate relief in the various courts of the state as provided for in RCW 90.48.037.

(3) Levying of civil penalties as provided for in RCW 90.48.144.

(4) Initiation of a criminal proceeding by the appropriate county prosecutor as provided for in RCW 90.48.140.

(5) Issuance of regulatory orders or directives as provided for in RCW 90.48.240.

[Statutory Authority: Chapters 90.48 and 90.54 RCW. WSR 03-14-129 (Order 02-14), recodified as § 173-201A-530, filed 7/1/03, effective 8/1/03. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-180, filed 11/25/92, effective 12/26/92.]

## PART VI - USE DESIGNATIONS FOR WATERS OF THE STATE

**WAC 173-201A-600 Use designations—Fresh waters.** (1) All surface waters of the state not named in Table 602 are to be protected for the designated uses of: Salmonid spawning, rearing, and migration; primary contact recreation; domestic, industrial, and agricultural water supply; stock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values.

(a) Additionally, the following waters are also to be protected for the designated uses of: Core summer salmonid habitat; and extraordinary primary contact recreation:

(i) All surface waters lying within national parks, national forests, and/or wilderness areas;

# **Attachment 9**

(Case No. 351998)

## WAC 173-201A-510

### Means of implementation.

(1) **Permitting.** The primary means to be used for controlling municipal, commercial, and industrial waste discharges shall be through the issuance of waste discharge permits, as provided for in RCW **90.48.160**, **90.48.162**, and **90.48.260**. Waste discharge permits, whether issued pursuant to the National Pollutant Discharge Elimination System or otherwise, must be conditioned so the discharges authorized will meet the water quality standards. No waste discharge permit can be issued that causes or contributes to a violation of water quality criteria, except as provided for in this chapter.

(a) Persons discharging wastes in compliance with the terms and conditions of permits are not subject to civil and criminal penalties on the basis that the discharge violates water quality standards.

(b) Permits must be modified by the department when it is determined that the discharge causes or contributes to a violation of water quality standards. Major modification of permits is subject to review in the same manner as the originally issued permits.

(2) **Miscellaneous waste discharge or water quality effect sources.** The director shall, through the issuance of regulatory permits, directives, and orders, as are appropriate, control miscellaneous waste discharges and water quality effect sources not covered by subsection (1) of this section.

(3) **Nonpoint source and stormwater pollution.**

(a) Activities which generate nonpoint source pollution shall be conducted so as to comply with the water quality standards. The primary means to be used for requiring compliance with the standards shall be through best management practices required in waste discharge permits, rules, orders, and directives issued by the department for activities which generate nonpoint source pollution.

(b) Best management practices shall be applied so that when all appropriate combinations of individual best management practices are utilized, violation of water quality criteria shall be prevented. If a discharger is applying all best management practices appropriate or required by the department and a violation of water quality criteria occurs, the discharger shall modify existing practices or apply further water pollution control measures, selected or approved by the department, to achieve compliance with water quality criteria. Best management practices established in permits, orders, rules, or directives of the department shall be reviewed and modified, as appropriate, so as to achieve compliance with water quality criteria.

(c) Activities which contribute to nonpoint source pollution shall be conducted utilizing best management practices to prevent violation of water quality criteria. When applicable best management practices are not being implemented, the department may conclude individual activities are causing pollution in violation of RCW **90.48.080**. In these situations, the department may pursue orders, directives, permits, or civil or criminal sanctions to gain compliance with the standards.

(d) Activities which cause pollution of stormwater shall be conducted so as to comply with the water quality standards. The primary means to be used for requiring compliance with the standards shall be through best management practices required in waste discharge permits, rules, orders, and directives issued by the department for activities which generate stormwater pollution. The consideration and control procedures in (b) and (c) of this subsection apply to the control of pollutants in stormwater.

(4) **General allowance for compliance schedules.**

(a) Permits and orders issued by the department for existing discharges may include a schedule for achieving compliance with effluent limits and water quality standards that apply to:

- (i) Aquatic life uses; and
- (ii) Uses other than aquatic life.

(b) Schedules of compliance shall be developed to ensure final compliance with all water quality-based effluent limits and the water quality standards as soon as possible. The department will decide whether to issue schedules of compliance on a case-by-case basis. Schedules of compliance may not be issued for new discharges. Examples of schedules of compliance that may be issued include:

- (i) Construction of necessary treatment capability;

- (ii) Implementation of necessary best management practices;
- (iii) Implementation of additional stormwater best management practices for discharges determined not to meet water quality standards following implementation of an initial set of best management practices; and

- (iv) Completion of necessary water quality studies related to implementation of permit requirements to meet effluent limits.

(c) For the period of time during which compliance with water quality standards is deferred, interim effluent limits shall be formally established, based on the best professional judgment of the department. Interim effluent limits may be numeric or nonnumeric (e.g., construction of necessary facilities by a specified date as contained in an order or permit), or both.

(d) Prior to establishing a schedule of compliance, the department shall require the discharger to evaluate the possibility of achieving water quality standards via nonconstruction changes (e.g., facility operation, pollution prevention). Schedules of compliance shall require compliance with the specified requirements as soon as possible. Compliance schedules shall generally not exceed the term of any permit unless the department determines that a longer time period is needed to come into compliance with the applicable water quality standards.

(e) When an approved total maximum daily load has established waste load allocations for permitted dischargers, the department may authorize a compliance schedule longer than ten years if:

- (i) The permittee is not able to meet its waste load allocation in the TMDL solely by controlling and treating its own effluent;

- (ii) The permittee has made significant progress to reduce pollutant loading during the term of the permit;

- (iii) The permittee is meeting all of its requirements under the TMDL as soon as possible; and

- (iv) Actions specified in the compliance schedule are sufficient to achieve water quality standards as soon as possible.

**(5) Compliance schedules for dams:**

- (a) All dams in the state of Washington must comply with the provisions of this chapter.

- (b) For dams that cause or contribute to a violation of the water quality standards, the dam owner must develop a water quality attainment plan that provides a detailed strategy for achieving compliance. The plan must include:

- (i) A compliance schedule that does not exceed ten years;

- (ii) Identification of all reasonable and feasible improvements that could be used to meet standards, or if meeting the standards is not attainable, then to achieve the highest attainable level of improvement;

- (iii) Any department-approved gas abatement plan as described in WAC **173-201A-200** (1)(f)(ii);

- (iv) Analytical methods that will be used to evaluate all reasonable and feasible improvements;

- (v) Water quality monitoring, which will be used by the department to track the progress in achieving compliance with the state water quality standards; and

- (vi) Benchmarks and reporting sufficient for the department to track the applicant's progress toward implementing the plan within the designated time period.

(c) The plan must ensure compliance with all applicable water quality criteria, as well as any other requirements established by the department (such as through a total maximum daily load, or TMDL, analysis).

(d) If the department is acting on an application for a water quality certification, the approved water quality attainment plan may be used by the department in its determination that there is reasonable assurance that the dam will not cause or contribute to a violation of the water quality standards.

(e) When evaluating compliance with the plan, the department will allow the use of models and engineering estimates to approximate design success in meeting the standards.

(f) If reasonable progress toward implementing the plan is not occurring in accordance with the designated time frame, the department may declare the project in violation of the water quality standards and any associated water quality certification.

(g) If an applicable water quality standard is not met by the end of the time provided in the attainment plan, or after completion of all reasonable and feasible improvements, the owner must take the following steps:

(i) Evaluate any new reasonable and feasible technologies that have been developed (such as new operational or structural modifications) to achieve compliance with the standards, and develop a new compliance schedule to evaluate and incorporate the new technology;

(ii) After this evaluation, if no new reasonable and feasible improvements have been identified, then propose an alternative to achieve compliance with the standards, such as site specific criteria (WAC 173-201A-430), a use attainability analysis (WAC 173-201A-440), or a water quality offset (WAC 173-201A-450).

(h) New dams, and any modifications to existing facilities that do not comply with a gas abatement or other pollution control plan established to meet criteria for the water body, must comply with the water quality standards at the time of project completion.

(i) Structural changes made as a part of a department approved gas abatement plan to aid fish passage, described in WAC 173-201A-200 (1)(f)(ii), may result in system performance limitations in meeting water quality criteria for that parameter at other times of the year.

(6) **Combined sewer overflow treatment plant.** The influent to these facilities is highly variable in frequency, volume, duration, and pollutant concentration. The primary means to be used for requiring compliance with the human health criteria shall be through the application of narrative limitations which include, but are not limited to, best management practices required in waste discharge permits, rules, orders and directives issued by the department.

[Statutory Authority: RCW 90.48.035, 90.48.605 and section 303(c) of the Federal Water Pollution Control Act (Clean Water Act), C.F.R. 40, C.F.R. 131. WSR 16-16-095 (Order 12-03), § 173-201A-510, filed 8/1/16, effective 9/1/16. Statutory Authority: Chapters 90.48 and 90.54 RCW. WSR 03-14-129 (Order 02-14), amended and recodified as § 173-201A-510, filed 7/1/03, effective 8/1/03. Statutory Authority: Chapter 90.48 RCW and 40 C.F.R. 131. WSR 97-23-064 (Order 94-19), § 173-201A-160, filed 11/18/97, effective 12/19/97. Statutory Authority: Chapter 90.48 RCW. WSR 92-24-037 (Order 92-29), § 173-201A-160, filed 11/25/92, effective 12/26/92.]

# **Attachment 10**

(Case No. 351998)



**RCW 34.05.422****Rate changes, licenses.**

(1) Unless otherwise provided by law: (a) Applications for rate changes and uncontested applications for licenses may, in the agency's discretion, be conducted as adjudicative proceedings; (b) applications for licenses that are contested by a person having standing to contest under the law and review of denials of applications for licenses or rate changes must be conducted as adjudicative proceedings; and (c) an agency may not revoke, suspend, or modify a license unless the agency gives notice of an opportunity for an appropriate adjudicative proceeding in accordance with this chapter or other statute.

(2) An agency with authority to grant or deny a professional or occupational license must notify an applicant for a new or renewal license not later than twenty days prior to the date of the examination required for that license of any grounds for denial of the license which are based on specific information disclosed in the application submitted to the agency. The agency must notify the applicant either that the license is denied or that the decision to grant or deny the license will be made at a future date. If the agency fails to give the notification prior to the examination and the applicant is denied licensure, the examination fee must be refunded to the applicant. If the applicant takes the examination, the agency must notify the applicant of the result.

(3) When a licensee has made timely and sufficient application for the renewal of a license or a new license with reference to any activity of a continuing nature, an existing full, temporary, or provisional license does not expire until the application has been finally determined by the agency, and, in case the application is denied or the terms of the new license limited, until the last day for seeking review of the agency order or a later date fixed by order of the reviewing court.

(4) If the agency finds that public health, safety, or welfare imperatively requires emergency action, and incorporates a finding to that effect in its order, summary suspension of a license may be ordered pending proceedings for revocation or other action. These proceedings must be promptly instituted and determined.

(5) This section does not apply to requests made by the department of revenue, under the authority of RCW **82.08.155**, to the \*liquor control board to suspend a person's spirits license and to refuse to renew any spirits license held by the person and to issue any new spirits license to the person.

[ **2012 c 39 § 6**; **1989 c 175 § 13**; **1988 c 288 § 405**; **1980 c 33 § 1**; **1967 c 237 § 8**. Formerly RCW **34.04.170**.]

**NOTES:**

**\*Reviser's note:** The "state liquor control board" was renamed the "state liquor and cannabis board" by **2015 c 70 § 3**.

**Construction—Effective date—2012 c 39:** See notes following RCW **82.08.155**.

**Effective date—1989 c 175:** See note following RCW **34.05.010**.

**TEMKIN & HARDT LLP**

**September 25, 2017 - 1:05 PM**

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